# HEALTH HAZARDS ASSOCIATED WITH ASBESTOS-CONTAINING MATERIALS IN PUBLIC FACILITIES

(98-67)

# HEARINGS

BEFORE THE

SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS

OF THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION HOUSE OF REPRESENTATIVES

NINETY-EIGHTH CONGRESS

SECOND SESSION

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OCTOBER 2, 1984, IN WASHINGTON, DC
OCTOBER 22, 1984, IN ST. LOUIS, MO

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# HEALTH HAZARDS ASSOCIATED WITH ASBESTOS-CONTAINING MATERIALS IN PUBLIC FACILITIES

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TUESDAY, OCTOBER 2, 1984

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
*Washington, DC.*

The subcommittee met, pursuant to call, at 12:20 p.m., in room 2203, Rayburn House Office Building, Hon. Robert A. Young (chairman of the subcommittee) presiding.

Mr. YOUNG. The Subcommittee on Public Grounds will please come to order. I would first like to take this opportunity to welcome a distinguished group of witnesses as the subcommittee continues its third set of hearings concerning the advocacy of Federal efforts to protect Federal employees, schoolchildren, and Americans in general from the possible asbestos hazards in public buildings, schools, and general working environment.

At the last subcommittee hearing on March 21, 1984, it was clear no single Federal department or agency had taken a responsibility for administering a unified program to address the comprehensive issue of asbestos in schools, homes, or public buildings. Thus, the subcommittee intends to review the adequacy of the existing programs both in terms of administration and statutory authority.

Scientific evidence linking asbestos with fatal cancers has been available to the Government for over half a century. Yet the Government's efforts to control this large health hazard are still at a primitive stage. The question which remains unresolved is why?

The Government should have uniform policy of dealing with the presence of asbestos. The various agencies with responsibility for administering the program, as well as local officials in dealing with schools, should have a reliable set of guidelines to follow. An established policy would help dispell any unwarranted panic while giving officials a set course of action.

Protection of the health of the workers, students, and others who use Federal and commercial buildings and schools should be the No. 1 priority with the Federal agencies with the cleanup responsibilities. Recently, we learned that the Environmental Protection Agency did a survey of all space in which EPA employees are housed due to their concern for the high levels of asbestos present in so many Federal buildings.

In North Carolina, the Environmental Protection Agency, with concurrence of the GSA, relocated half the occupants in a building

as a result of friable asbestos being present. Yet, employees other than EPA employees relocated were left to work in the building under the same conditions but under different GSA guidelines or standards.

I question why there is no continuity within the Federal Government regarding asbestos and safe level of exposure to asbestos. I am greatly concerned that no agency to date has required contractor certification for removal of asbestos from buildings. Reports and press accounts have shown asbestos abatement is being done improperly and the disposal of asbestos material once removed is being done in a haphazard and careless manner.

I am hopeful today that the hearings will find that the Federal Government has taken the necessary action to put its own house in order and that a single agency has been given the lead role to deal with the issue of asbestos. However, if we find that is not the case, it would be my intention as chairman of the subcommittee to introduce legislation early in the 99th session of Congress to place responsibility for this program under a lead agency in order to protect the health of the public in general and provide the necessary funding for the abatement of this hazardous material if warranted.

The Chair will now recognize the ranking minority member of the subcommittee, Hon. E. Clay Shaw, for an opening statement.

Mr. SHAW. Mr. Chairman, I would like to join you in welcoming today's witnesses for our final subcommittee hearing of the 98th Congress.

Its been my pleasure to have the opportunity to serve as the ranking minority member next to you. Your leadership, together with the assistance and cooperation of the rest of the members, has enabled us to address and resolve many important issues.

Though we have had some disagreements over the past 2 years we have been able to resolve most issues, and I think that on balance we can be proud of the legislative accomplishment we have achieved this Congress.

Our hearing this morning addresses the very important issue of asbestos in public buildings and schools and what we are doing about it.

Like so many substances we are now learning more about, asbestos was used initially to protect and save lives and now as it turns out asbestos is actually life threatening.

Over the past several years, Government agencies responsible for regulating and controlling asbestos have done a great deal to minimize and eliminate the asbestos risk in the workplace and schools.

The General Services Administration has identified over 200 Federal buildings with asbestos, 44 of them with critical levels, and is now working to remove, or abate by various methods, the asbestos which has been found.

The Occupational Safety and Health Administration has increased the number of Federal inspections in targeted high-hazard workplaces elevenfold and is encouraging greater interagency coordination and cooperation.

The U.S. Postal System has identified friable asbestos in 1,174 of its more than 34,000 facilities and corrective actions have been taken in over 60 percent of these buildings.

And right here in Washington, based on guidelines and direction from the Environmental Protection Agency, the D.C. school system has identified asbestos in 162 of its 189 schools which otherwise might have gone undetected and ignored.

The record is clear that action is being taken, despite the histrionics that nothing is being done.

More can and needs to be done though.

Certification of contractors responsible for asbestos abatement is desperately needed; greater research is necessary with regard to abatement procedures; risk assessment guidelines must be put into place; and training of public building maintenance personnel in asbestos identification, asessment, and control is essential.

Mr. Chairman, I look forward to receiving the comments of today's witnesses and I hope with their continued efforts and the involvement of our subcommittee and the Congress we might insure a healthier environment in both the workplace and classroom for employees and children throughout the country.

Mr. YOUNG. Thank you very much, Mr. Shaw, for your fine statement. Our first panel will be Mr. Messner, Assistant Administrator for Administration and Resources of the Environmental Protection Agency; Mr. Lester L. Mitchell, Commissioner, Public Buildings Service, General Services Administration; Mr. Roger P. Craig, Assistant Postmaster General, Real Estate and Buildings Department, U.S. Postal Service; Dr. James Melius, Chief of Health Hazards Evaluation Branch, NIOSH; and Mr. John F. Welch, president, Safe Buildings Alliance. Gentlemen and accompanying staff and directors, on behalf of the committee, I want to thank you for your attendance.

Our first witness will be Mr. Messner. Mr. Messner, without objection, all of the statements of the panel will be made a part of the record and all of you could summarize in the manner you like.

[Statements referred to follow:]

STATEMENT OF HOWARD M. MESSNER, ASSISTANT ADMINISTRATOR FOR ADMINISTRATION AND RESOURCES MANAGEMENT

Mr. Chairman and Members of the Subcommittee, I am pleased to have this opportunity to share with the Committee our Agency's recent experiences with the serious and sensitive matter of asbestos in public buildings. I would like to emphasize at the outset the strong and valuable assistance and support that we have received from the General Services Administration as we have dealt with this complex issue. GSA's responsiveness, cooperation, and timeliness have helped make it possible for us to move rapidly to protect Environmental Protection Agency employees from exposure to potentially hazardous conditions in the workplace.

THE HAZARD OF FRIABLE ASBESTOS

Asbestos becomes a serious health hazard when people inhale minute fibers of the material. This means that the greatest potential asbestos danger to people comes from those forms of the material that may easily break down into small fibers. This is referred to as "friable asbestos"—essentially any asbestos material applied onto ceilings, walls, structural members, piping, ductwork, or any other part of a building structure which, when dry, may be crumbled, pulverized, or reduced to power by hand pressure.

EPA'S CONCERN ABOUT ASBESTOS IN ITS FACILITIES

EPA has played an active role in asbestos activities since 1979. At that time, our Office of Pesticides and Toxics Substances established a program to provide needed information to schools on how to identify and deal with any asbestos situations. In 1982, EPA promulgated a rule requiring that schools inspect for asbestos and notify

parents when asbestos is found. EPA believes that it would be inappropriate to expect numerous schools to perform these inspections and not to subject itself to those same standards. Coupled with our ongoing responsibilities under OSHA, this led our Deputy Administrator to initiate a thorough survey of EPA facilities to determine whether we had friable asbestos in our buildings.

### STUDY OF ASBESTOS IN EPA BUILDINGS

On May 3, 1984, EP Deputy Administrator Alvin L. Alm directed my Office and the Office of Pesticides and Toxic Substances to complete a survey of all EPA facilities within ninety days for the presence of asbestos. Of the Agency's 273 buildings, we scheduled 220 for immediate review. The fifty-three facilities deferred for later inspection consisted of warehouses, garages, and other buildings of low or infrequent occupancy.

Our Occupational Health and Safety Staff coordinated the three month survey, assuring that the sampling and inspection procedures used were consistent with EPA's published guidance on the subject.

By mid-August, the preliminary survey results were ready for the Deputy Administrator:

Inspections and sample analysis had been completed for 202 of the originally scheduled 220 buildings.

Forty-three facilities were found to have asbestos-bearing materials. (The final survey results showed 49 facilities)

12 of these buildings had material that was sprayed or troweled on friable asbestos in occupied space. (now 13.)

The Deputy Administrator immediately directed that health-hazard evaluations be completed on these twelve buildings during the following two weeks; that all remaining evaluations and inspections be done as soon as possible; and that we work closely with GSA to have a coordinated program among Federal agencies.

### COMMUNICATING WITH OUR EMPLOYEES

At this point, the Deputy Administrator shared the survey results and the Agency's plans for dealing with them with our employees. In an August 24, 1984, memorandum to all employees—which I am pleased to provide for the record—he communicated the preliminary results of the survey and emphasized that:

Information would be provided indicating where in each facility concentrations of asbestos existed;

Asbestos was only dangerous if the fibers become airborne;

The Agency would remove or seal any potentially hazardous material to eliminate the exposure; and

If any hazards existed, the Agency would act immediately to protect employees—including relocation if necessary.

### RESULTS OF HEALTH-HAZARD EVALUATIONS

The health-hazard evaluations that the Deputy Administrator initiated were completed for the first nine buildings before the end of August. The remaining health-hazard evaluations are now being completed.

The evaluations showed two situations in which the potential danger was sufficiently great to warrant immediate actions—the National Center for Health Statistics (NCHS) Building in Research Triangle Park, North Carolina and the Region 8 office building in Denver, Colorado.

In each of the other cases, while there is a potential for exposure, we believe we can control or reduce the potential by:

Preventing disruption of the material by controlling activities and making modifications;

If the material must be disrupted, for example in remodelling or construction, isolating the area, protecting workers, and totally cleaning up all debris;

Sealing surfaces to prevent the material from being dislodged;

Notifying employees so they will not disrupt the material and can spot questionable practices;

Maintaining surveillance of the material to detect any deterioration, and

Developing a specialized operations and maintenance program.

In the Research Triangle Park and Denver situations, we had to move quickly to take additional actions.

RELOCATION OF EPA EMPLOYEES IN RTP

At the NCHS building in Research Triangle Park the condition, location, potential for worsening conditions, and presence of friable asbestos in employee workspace made us decide to relocate our employees. On August 23, the day the evaluation team made its recommendations, we took sixty employees out of the building. I discussed the situation with GSA that afternoon and received their full support. The following day GSA gave us an emergency delegation of authority to lease substitute space for those employees. A suitable building was leased in Durham and all of the affected employees have been relocated there.

We have offered all of the affected employees admittance—on a voluntary basis—to our medical monitoring program. The program includes chest x-rays and pulmonary function tests.

A contract has been let to specially clean all EPA equipment and material in the NCHS facility before it is relocated.

I would like to emphasize at this point our Agency's appreciation for the quick response and cooperation we received from GSA as we dealt with the NCHS facility issue. Acting Administrator Ray Kline and Commissioner Les Mitchell of the Public Buildings Service moved very expeditiously to be helpful to us, significantly reducing the scope of the problem we were facing.

RELOCATING EMPLOYEES IN REGION 8

The potential asbestos hazard in our Region 8 offices also resulted in the relocation of employees. In this case asbestos fibers were falling from the ceiling into the workplace as construction work was being done in the building. In keeping with our policy of eliminating the exposure hazard, we have relocated the affected employees, including our Regional Administrator, and are working with the building's management to remove the asbestos. The removal effort is currently underway.

CONTINUING ACTIONS

We continue to focus attention on the problem of asbestos in EPA facilities. The problem arose again concerning our planned move to occupy additional office space in Dallas for our Region 6 employees. When our health-hazard evaluation team was in Dallas, it inspected the new space and found some asbestos. The asbestos is in stable condition. Given this fact, the space needs of the regional office, and the short-term nature of our expected stay in the building, we are continuing with our plans to occupy the space. We can protect our employees by assuring that any disruptive alterations are completed before we move. In approving this plan, our Deputy Administrator re-emphasized the underlying principle of our policy in this area: to assure that we are not causing a health problem.

We have worked out a close relationship with GSA which includes them in our facility inspections and which gives GSA the lead in posting asbestos notices in space we occupy in federal and GSA-leased buildings. This will permit GSA to take the leadership in the uniform posting of federal space nationally.

This positive working relationship with GSA is reflected in the constant flow of communications and updates between our organizations, joint inspections of potential asbestos hazards, and a coordinated effort to decide how to proceed concerning the determination of "acceptable" asbestos levels in federal facilities consistent with everybody's priority interest in assuring the continuing health and safety of our employees.

CONCLUSION

The Environmental Protection Agency will continue to be concerned about asbestos and its attendant health hazards. Our Office of Pesticides and Toxic Substances will continue to focus on the broad aspects of the issue, including asbestos in schools and in public buildings. And my office, in close cooperation with GSA, will make sure that any asbestos which could become airborne and pose a health threat to our own employees will be dealt with quickly and effectively.

Thank you for your interest in and concern about this issue.

Marcia Williams, our Deputy Assistant Administrator for Pesticides and Toxic Substances, and John Chamberlin, our Director of Administration, are with me today. We would be pleased to respond to any questions you may have.

STATEMENT OF JOHN F. WELCH, PRESIDENT, SAFE BUILDINGS ALLIANCE

Thank you, Mr. Chairman. My name is John Welch, President of the Safe Buildings Alliance (SBA). I welcome the opportunity to appear before this Subcommittee today.

The Alliance is a newly-formed association of companies that previously manufactured asbestos-containing materials for building construction. SBA was formed to help promote a reasonable response to the issue of asbestos in schools and other buildings—a response that will safely and effectively protect our children and other occupants.

Like many others here today, we believe that the Environmental Protection Agency's current program is, simply stated, inadequate. Recent press articles, such as those in this enlargement, underscore the seriousness of this situation. We hope today's hearing will aid in the development of a sensible policy to remedy asbestos conditions that might pose unreasonable risks.

The Alliance shares Congress' concern about the need to assess realistically the health risks in schools where asbestos-containing products exist. And, equally important, if abatement action is necessary, we share the concern that it be performed with safeguards to protect children, teachers and workers alike.

In recent months, widespread media and public attention has resulted in highly emotional responses and a growing fear that any asbestos in any product in any school represents an imminent threat to children and adults working within the schools.

Fortunately, Mr. Chairman, this is not the case. The threat is not immediate, nor is it as some have claimed a "ticking time bomb" set to explode years from now. The mere presence of an asbestos-containing material does not, of itself, pose any hazard to building occupants.

It is not this reality, however, that brings us to the point where we are today. Rather, it is the legacy of asbestos-related disease—disease that resulted primarily from the exposure of many World War II shipyard workers to extremely high levels of asbestos. This emotional legacy, kindled by EPA's ineffective guidance, brings us to the current near-panic over the potential health risks posed by asbestos-containing materials in buildings.

How ironic that asbestos, once required by municipal building codes, architects and engineers to protect and save lives from fire, should become the source of anxiety and agonizing debates over its presence in our nation's schools.

Without qualification, the Safe Buildings Alliance believes that the paramount concern of this Subcommittee's examination of the issue should be the safety of children and workers in the schools. The challenge for all of us—SBA, SEIU, EPA—is to sort out facts from emotion—to make sound decisions, and to advise the public of these facts. A number of governmental bodies and independent scientists have done just that.

Numerous scientific studies indicate that typical exposure levels of asbestos in schools and other buildings are close to the normal levels found in outside air. Very little, if any, risk is presented to building occupants in these situations.

The report of the Ontario Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos is the most authoritative, up-to-date source of data on indoor asbestos. The Report is based on 53 days of hearings, over 8,000 pages of testimony including that of many leading U.S. experts on asbestos health effects, 88 written submissions and 12 newly-commissioned research studies. The Commission found that Ontario's program to remove asbestos from schools actually resulted in potential endangerment of building occupants and needless expenditure of dollars. Only a fraction of the removal projects were warranted by the risks posed by asbestos.

In fact, the Commission concluded that asbestos removal is generally not warranted for occupant protection where the asbestos is undisturbed. It further found that undisturbed asbestos in good condition should be left alone.

The Commission, EPA and virtually all other experts agree that poorly-handled removal of asbestos-containing materials can result in significant exposure to workers as well as building occupants.

The Congressionally-chartered National Institute of Building Sciences (NIBS) concurs. It recently cited cases where stable asbestos, disturbed during abatement, resulted in airborne asbestos where it had not been previously found. According to the Institute, "It is clear that poor abatement practices may exacerbate existing conditions rather than solve problems."

Mr. Chairman, the Safe Buildings Alliance, therefore, believes that the serious problem regarding asbestos in schools is in its presence, but the danger that hasty

and unnecessary removal actions will actually create hazards where none previously existed.

In support of this belief we call your attention to a recent report by the State Public Advocate on the status of removal projects in New Jersey. This report states loudly and clearly that improper removal of asbestos materials can be far more hazardous than if the materials are not removed at all.

The report cites examples where poor asbestos removal, prompted by public and regulatory pressure, actually created greater risks. The New Jersey Public Advocate's report, which I would like to submit for the record, cites instances of workers not wearing proper respiratory protection during removal, of inadequate inspection during the removal projects, and of contractors' requiring workers to stay on the job as long as 20 hours straight.

The report also notes that many of the contracting companies hired to do the abatement work were unqualified, and that workers routinely ignored procedures designed to insure safe removal and disposal of the asbestos material.

Similar conditions almost certainly exist throughout the country. The apparent cause for such flagrant mishandling of asbestos clean-ups is the ongoing confusion and lack of information among federal, state and local agencies in identifying where a problem may exist and what to do about it.

We believe it is essential that the Environmental Protection Agency step in to provide these answers—to correct an increasingly alarming situation that it, in part, helped create. State and local officials desperately need guidance in determining those conditions that require abatement and those that do not. These officials have been waiting for this guidance from the EPA for too long.

Two years ago, the General Accounting Office identified this need in a report criticizing EPA on the shortcomings of its notification requirements. The reported stated, "These programs . . . have not resolved the dilemma school officials face in trying to distinguish between hazardous situations needing to be corrected and those presenting relatively insignificant risks."

Fortunately, Mr. Chairman, Congress has recognized the enormous complexity of the situation, and with passage last month of the Asbestos School Hazard Abatement Act, taken preliminary steps to help local school officials. With this act EPA now has additional resources to begin to deal effectively with the asbestos in schools situation.

Much more remains to be done, however. There is a critical need within the next few months for EPA to fund the development of educational and training programs for abatement consultants, inspectors and contractors. School officials must be assured that the experts they employ to assist in the assessment and abatement of asbestos conditions are fully qualified. There should also be greater emphasis in regulation and legislation on non-removal abatement alternatives, including repair for damaged materials, encapsulation where appropriate, and enclosure and special maintenance procedures to minimize asbestos fiber exposure.

The bottom line, Mr. Chairman, is this. Qualified experts are crucial, but without comprehensive guidelines on asbestos identification and abatement they simply cannot do their job. Development of reasonable guidelines will not be easy, but such guidelines are essential if this nation is to void further uncontrolled removal actions that increase asbestos exposures.

We therefore encourage you and your Subcommittee to urge the EPA to develop procedures and standards that will help school officials:

(1) Determine when response actions are necessary.

(2) Identify the proper action.

(3) Ensure that any such abatement is performed safely and effectively.

This last step we believe will require EPA to certify or license consultants, contractors and inspectors as a conditioning of grant funding under the Asbestos School Hazard Abatement Act. Moreover, abatement consultants and inspectors should be independent, with no financial interest in or employment by, individuals or corporations that perform the actual abatement work.

EPA argues that legislation or regulation at this point will slow down the assessment and abatement process because local school systems will wait for guidelines to be established before acting.

I ask you—is it better to have local school boards or teachers "eyeball" the situation, with each community developing its own standards? Is it better for communities to divert funds for unnecessary and often dangerous asbestos removal when precious dollars for education are already shrinking? These school systems will not and cannot wait. They are under immense political and public pressure.

Safety is the most important issue. The current system is not working for anyone, including children, teachers, workers, school boards, and state and local officials.

The Safe Buildings Alliance joins a wide range of concerned organizations, including the teachers' and school employees' unions in their concern over the lack of EPA standards. We agree that EPA must move and move quickly to establish nationwide guidelines for assessing asbestos risk and standards for abatement if a risk is identified.

On behalf of the Safe Buildings Alliance, I would like to commend the Subcommittee for addressing this highly complex and emotional issue. I appreciate having the opportunity to participate in this hearing. I would be glad to answer any questions.

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## Testimony Prepared by the Department of the Public Advocate

### INTRODUCTION

I appreciate this opportunity to address the Governor's State Asbestos Policy Committee to present the views of the Department of the Public Advocate on the issues of asbestos in schools and other public buildings in New Jersey.

The Department of the Public Advocate strongly supports Governor Kean's Executive Order #59, issued last January, directing the creation of a state policy on the complex issue of asbestos hazard. The executive order was designed to meet the state's obligation to protect the health of its people from the effects of exposure to asbestos fibers in public buildings as well as the workplace.

It is important to recall the purpose behind the creation of a state asbestos policy, especially with regard to the concerns we bring before you today. In an introductory report to the committee, prepared by the Governor's office last December, it was noted that the committee "shall in particular undertake review and development of sections of policy related to assessment of asbestos hazards in public buildings . . . and regulation and control of asbestos removal operations." The report pointed out that "In situations in which the State exercises a substantial measure of jurisdiction and control, the State may act directly to reduce the exposure of persons to asbestos when its professional staff concludes that the action is warranted by the potential for hazard to health. Locations in which a substantial measure of jurisdication and control exists include the public schools."

I come before you today, however, to discuss the Public Advocate's concerns regarding asbestos removal activities in the public schools which unfortunately cannot await the adoption of a state asbestos policy but must be addressed immediately, as our school children are about to begin the 1984-85 school year. Several basic considerations should underlie our response to the asbestos removal activities being conducted this summer.

First, the paramount of all of us should be the health and safety of children and workers.

Second, there are approximately 300 public schools in twenty counties in the State that were scheduled to undergo asbestos removal this summer. Our department has been concerned for several months about the manner in which these asbestos removal projects are being conducted. Improper asbestos removal places workers, building occupants, teachers and especially children at risk of serious health injury. It is well documented that the improper removal of asbestos can be far more hazardous than if the asbestos is not removed at all.

Third, our Department has found that there is no state agency willing, at present, to take the lead in coordinating and directing this complex undertaking. Indeed, there is much confusion with regard to agency responsibility and authority.

As we all know, the issue of asbestos hazards in schools is a volatile one, caught up in a triangle of opposing positions: the emotionalism, rhetoric and public pressure of parents and teachers; the desire of school administrators to respond to these concerns; and the confused role of state officials. The result of the interplay among these forces has been an asbestos abatement program that is too often not rational, not necessary, not in the best interests of the health and safety of children, and one which substitutes precipitious action for a measured, technically sound response to very real health concerns.

The Public Advocate's goal, and the goal of this committee, is to devise an intelligent program for removal, containment or management of asbestos hazards in schools and other public buildings based upon a state asbestos policy which includes definitive standards for identification and risk-assessment using the best available scientific and technical information. This goal, however, must also ensure that the short-term solution of immediate removal of asbestos does not create even greater dangers for the children in our schools. The introductory report to this committee

emphasized that the "volatile school issue and the public pressure to immediately remove all asbestos in our schools, may possibly lead us to a potentially more serious problem which is asbestos exposure to individuals who remove or work around asbestos materials."

Dr. Robert N. Sawyer, a nationally recognized expert in the field of asbestos removal and until recently EPA's own expert, testified before the EPA at a public hearing held last month on the agency's response to asbestos-containing materials in schools. Dr. Sawyer expressed his concern about how the overreaction of parents and school officials to asbestos found in their school often results in a greater health hazard than is originally realized:

There has evolved a picture of inappropriate reactions to the presence of asbestos-bearing materials in schools. This overreaction has often resulted in unnecessary abatement activities including, most significantly, removal operations. . . . The decision whether to remove asbestos-bearing materials is in the hands of highly stressed and poorly prepared local school administrators. Often such officials must rely on contractors or consultants who may have self-serving interests in the outcome, or who have only recent reputation and undocumented expertise in this area. . . . In these situations efforts that began with the intent to reduce exposures have instead: (1) converted a situation of highly questionable risk to that of certain and well-documented hazards to the involved abatement workers; and (2) in some cases caused contamination of school structures and grounds that have placed children, teachers and other school personnel at totally unnecessary risk of exposure.

Dr. Sawyer went to note that "the surge in demand for removals greatly reduces the probability that the local school administration will obtain a competent contractor, experienced workers, knowledgeable architectural advice, and a safe removal operation." "There is a limited supply of such qualified personnel," he testified, "and demand has already exceeded the available supply." In addition, Dr. Sawyer pointed out that the supply is "already contaminated with irresponsible contractors and experts of dubious worth."

In his testimony, Dr. Sawyer also expressed his growing concern about the potential for adverse health effects in situations such as those he described above:

The potential for adverse health effects in such a setting are many magnitudes greater in most cases than if the material had simply been left alone. Unqualified contractors and untrained workers are more likely to aggravate the risk than to correct it. In the present environment of anxiety and haste, unnecessary removals are poorly-controlled removals. In these cases, a situation of highly questionable and dubious risk is replaced by one that is certain.

"Based on my observations," Dr. Sawyer concluded, "these removals, under current conditions, are causing unnecessary and unwarranted asbestos exposure to both abatement workers and building users, and these unnecessary exposures caused by removal can result in adverse health effects, including malignancies."

Against the backdrop of my introductory remarks, I would like to point out that the Department of the Public Advocate has become increasingly concerned about the issue of asbestos removal in the schools over the past few months. We established an internal asbestos policy group to determine why that should be the most appropriate response by the Public Advocate to this issue.

A member of this group attended the asbestos training seminar sponsored by the State Division of Building and Construction (DBC) in February and became certified in the State of New Jersey to remove asbestos from public buildings, even though she knew virtually nothing about what the mineral looks like, what health hazards are present on the job site, what regulations have to be followed in the removal process, what equipment to use and how to use it; how to properly set up the work space and provide decontamination and clean areas, how to accurately remove the asbestos and dispose of it, or how to conduct a proper clean-up of the area. She observed hundreds (there were over 1,000 people present) of would-be asbestos removal contractors/workers loitering in the hallways and outside the building for most of the seminar. To her amazement, however, she learned that everyone who had registered received state certification.

It is our understanding that the inadequacy of this seminar is acknowledged by DBC and that earlier this month a new section was added to the present DBC prequalification package designed to "make an adequate determination of firms capable of providing the necessary health and safety protection for workers involved in the asbestos control industry, as well as for the protection of users of this system." This section requires contractors to submit detailed information to the DBC regarding their experience and knowledge of the asbestos removal field.

While it is hoped that this new requirement will weed out many of the inexperienced and/or bad contractors, it certainly will not affect the quality of work undertaken in the schools this summer.

Based on our first-hand knowledge of the inadequacy of the state certification process, coupled with warnings we received in May and June from various persons involved both directly and indirectly with the asbestos industry and related state agencies, expressing concern about the large number of asbestos removal projects planned for the schools this summer, our department attempted to learn more about the federal, state and local responsibilities and administration of asbestos abatement programs in the schools.

Specifically, the Public Advocate met in June with officials from the State Departments of Education, Health and Treasury (DBC); representatives of the four area OSHA offices in New Jersey; industrial health hygienists from the five county occupational health programs in the State; and the Asbestos Coordinator for EPA Region II, to voice our concern about the need for a state-wide inspection program in the public schools scheduled to undergo asbestos removal this summer.

Letters were sent to school boards, PTAs and air monitoring/testing firms requesting their cooperation and assistance in an inspection effort, including one to all asbestos removal contractors on the DBC certified list warning them that federal, state and local government inspectors would be conducting inspections at removal sites throughout the summer.

The Public Advocate also extensively reviewed the files, logs, and records available from the Bureau of Facility Planning Services, Department of Education, in an effort to compile a complete list of schools scheduled for asbestos removal work. It is important to point out here that no state agency, including most importantly the Department of Education, had a comprehensive or even partially accurate list of such schools or projects. A state-wide inspection program requires an up-to-date listing of school projects and locations, contractors hired to do the removal work, whether or not 10-day asbestos removal notices are filed with the appropriate agencies as required by EPA regulation, and the approximate dates for the commencement and completion of each project.

We began to compile this listing at the end of June, and developed a comprehensive chart which detailed information gathered from many sources, including a telephone survey of school districts. This chart has continuously been updated on a daily basis since that time, and is used regularly by the Departments of Education and Health, county health inspectors and the Asbestos Coordinator in EPA Region II.

In addition, we compiled a comprehensive listing of all contractors and air monitoring/testing firms hired by school boards to conduct asbestos removal activities this summer, and researched their qualifications and performance records.

FINDINGS

1. The Department of Education approved asbestos removal projects in approximately 300 public schools in New Jersey for work scheduled to take place this summer. For the most part, these removal projects have been conducted concurrently in 20 of the state's 21 counties.

According to figures compiled by our department, to date only 28 of these 300 schools have been issued a certificate of occupancy by the Department of Education, Bureau of Facility Planning Services. Under Department of Education regulation, no school which has undergone asbestos removal activity may reopen until the school board receives a certificate of occupany certifying that the school is safe to reoccupy.

Of the remaining 272 schools, our figures show that only 75–100 have received a final inspection of the job site by a Department of Education inspector. Under Department of Education regulations, no school which has undergone asbestos removal work may undertaken any remedial construction activity—the replacement of ceilings, for example—until a departmental inspector visits the site to ensure that there is visible asbestos contamination present.

Therefore, close to 200 schools have yet to receive a final inspection and a certificate of occupancy, allowing them to open for the 1984–85 school year scheduled to begin next Tuesday, September 4th.

2. Most of the contractors who have been hired by the school boards to perform asbestos removal work have little experience in this specialized and sensitive field. DBC officials stated in June that nearly 100 of the 170 firms on the DBC certified list had never performed asbestos removal work. The Asbestos Coordinator for EPA Region II stated several weeks ago that of all the inspections he has made in New

Jersey this summer, he has not found one school removal site where the contractor has been in compliance with EPA regulations. "I could spend the next two months just sitting at my desk writing up all these violations," he said.

Poor performance by contractors is a result not only of an inadequate contractor pre-qualification process as described earlier, but also because it is virtually impossible to debar a contractor from bidding on a project or accepting a bid award if he is on the DBC list, and it is next-to-impossible to remove a contractor from the list. The Chief of the DBC Contractor Pre-Qualification Program pointed out that "if he's the low-bidder and he's on the DBC list, the school board has to hire him" even though it may be known to the DBC, the board, architect and others that the contractor has questionable and/or documented poor work performance. One example is a contractor who is the consistent low-bidder on school removal projects and has been hired by at least ten school districts to conduct asbestos removal this summer. This firm has received numerous notices of non-compliance with contract specifications and poor inspection reports from state and local health inspectors. In addition, the firm is currently involved in litigation resulting from poor work performance in several school asbestos removal projects conducted *last* summer.

Another reason for poor performance by contractors is the large number of removal projects being undertaken concurrently this summer. Because many good contractors are overextended, there is a lack of qualified asbestos removal workers for their required number of work crews.

In addition, inspectors from both the Departments of Education and Health have recently noticed that even the good contractors—those who have been trying all summer to do proper removal jobs—are now under a great deal of pressure from the school boards that hired them to get the jobs done as quickly possible to avoid delay of school opening.

"These jobs are really falling apart now." one inspector stated last week.

Examples of poor work performance, taken from various inspection reports of both state inspectors and private asbestos consultants hired by school boards illustrate these concerns.

Asbestos had been removed from the ceilings and was lying on the floor. It was not removed section-by-section, wetted and bagged.

The frames of the plastic doors on both the second and third floors (where removal was taking place) were falling apart, leaving gaps.

A worker coming out of the shower was still covered with asbestos on the face and head. One worker was taking a wash in a janitor's tub in a closet in the clean area.

Questioning one foreman, it was determined that a state inspection of the plastic containment system was never done. To quote this foreman: "I can't have my men standing around making $20 per hour while we wait for an inspector. The state was notified of the proposed removal, if they don't show up it is not my responsibility." A similar reason was given for not waiting for an air monitoring technician.

Asbestos workers were flushing the asbestos down the toilets.

The containment system was not totally sealed. At no point did it come in contact with the ceiling and at some points, it was as far away as two feet.

One worker was observed in the work area fully protected with respirator, disposable coveralls, hood and foot wear, handing bags of asbestos through a slit in the containment system to other workers with no respirators or protective clothing.

One contractor apparently proceeded into work areas without notifying the Board of Education, architect, the Department of Education or the air monitoring firm. Removal has, therefore, been conducted in classrooms without any inspection or air monitoring whatsoever. Conversations with the foreman indicated that he was not at all familiar with the requirements and could not describe how the work was done.

Workers are not wearing any respiratory protection or protective clothing during removal activities.

Asbestos is still being tracked into clean areas by workers who routinely do not shower when leaving the work area. In one instance, a substantial amount of asbestos debris was tracked from the second floor to the first floor.

The plastic barriers of the decontamination facility were torn and deteriorated as a result of worker and equipment passage. It took three days for workers to finally correct this problem.

On one particular day, fiber levels in the work area during two samples were higher than measurable (too numerous to count) using NIOSH procedures. This implies levels higher than are permitted by relevant regulations. This was the second time that the contractor had undertaken asbestos removal and clean-up operations under dry conditions and generated extremely high fiber levels as a result.

One contractor has been rushing workers to such a degree that men are working over 20 hours straight causing violations. The foreman has instructed the men to begin removal in areas that are not prepared and not inspected by the Department of Education.

One contractor has continued to refuse to conduct air monitoring on the work, and has disregarded the directives of the Department of Health relative to work area preparation and decontamination arrangement. In addition, waste asbestos has left the site in workers' vehicles on more than one occasion, destination unknown.

3. There now exists no adequate or comprehensive on-site inspection program to monitor the 300 asbestos removal projects during the work in progress. The Department of Education has had two full-time inspectors to conduct separate preliminary and final site inspections throughout the state this summer. An additional staff person has been utilized on a part-time basis. In the last week, three additional inspectors have become available, including the Manager of the Bureau of Facility Planning Services and his architectural supervisor.

In addition to being grossly overworked, these inspectors have received minimal training in asbestos removal techniques, procedures and regulatory requirements. Until recently, the two full-time inspectors conducted only cursory preliminary and final inspections, and there was no follow-up even if an inspection revealed violations of the minimum specifications. The adequacy of these inspections has been questioned by health professionals, environmental consultants, architects and others familiar with the field.

In June, the Department of Health assigned two health professionals from its Occupational and Environmental Health Program to assist the Department of Education in its inspection effort and provide follow-up inspections, where possible, after the preliminary inspections have been done. Two to three industrial health hygienists from several county occupational health programs have also assisted in this inspection effort this summer on an "as available basis in their area." To date, a total of about ten schools have been inspected by these county health professionals.

An additional three or four federal inspectors from OSHA area offices in New Jersey have also conducted inspections of school asbestos removal sites. In most cases, however, OSHA inspectors will not conduct on-site inspections unless they have been contacted by workers concerned about possible contamination.

The Asbestos Coordinator for EPA Region II—the only federal EPA asbestos inspector for New York, New Jersey, Puerto Rico and the Virgin Islands—completes the number of personnel that have been available for the inspection program this summer. This program is at best haphazard and disorganized.

Boards of education have the primary responsibility for assuring that appropriate safety procedures and contract conditions governing an asbestos removal project are followed. Boards of education, as owners of the school buildings, enter into the contracts with asbestos removal contractors and air monitoring/testing firms. It is clear that they have the authority to stop those jobs that are not proceeding according to contract specifications.

It should be noted here, however, that inspectors from both the state and county agencies have reported a lack of cooperation on the part of some school boards to rectify named violations of contract specifications. In their hurry to get the jobs done as quicky as possible so as not to delay school openings, the boards often create an atmosphere which fosters contractor beliefs that they can get away with less than total compliance with job specifications. The boards press contractors to complete the work and look upon health inspections as impediments to getting the asbestos out of the schools before Labor Day. They have been known to eject inspectors from job sites; look the other way when contactors threaten these inspectors; and refuse to shut down jobs in the face of documents reports of gross violations.

As mentioned previously, the Department of Education in its minimum specifications, requires that before a school is declared ready for occupancy following asbestos removal activity, the department must conduct a final visual inspection and sign off on the final air test results submitted by the school board's air monitoring/testing firm. There are two crucial concerns surrounding this process of certifying a school clean of asbestos fiber contamination. One concern is the quality of the department's final inspection. According to industrial health hygienists, environmental consulting and engineering firms, laboratory scientists and technicians, and architects experienced in the field of asbestos removal, a proper final inspection involves close visual scrutiny of the work space, and all areas surrounding this space, for any signs of dust. This must include among other things, hand wiping of walls, window sills and ledges, inspection for dust in heating and ventilating systems; and inspection for dust in all permanent ceiling and wall light fixtures, behind lockers, and any other locations where a quick look around would not reveal the potential

presence of asbestos dust. Most experts agree that performing a thorough visual inspection can be more important and more revealing concerning possible contamination than the results of certain air samples. Professionals in the field have stated that a comprehensive visual inspection could take several hours, depending upon the size of the job.

Until very recently, Department of Education inspectors spent approximately thirty minutes conducting a final inspection, and sometimes relied on the verbal okay from an air monitor technician on the job if they could not visit the removal site in person to conduct the final inspection. It is my understanding that only in the past couple of weeks have these inspectors been instructed not to approve any job if the final inspection raises the possibility of improper clean-up and to arrange for a follow-up visit to ensure that the site is dust-free.

The second concern is the quality of the final air test results submitted to the Department of Education by air monitoring-testing firms hired by school boards as independent monitors to ensure quality control of asbestos removal projects. These firms take their own air samples and have in-house laboratory capability to analyze these samples under phase contrast microscopy, the most commonly used and recognized technique for determining the presence of asbestos fibers in the environment.

These firms cover a broad spectrum in terms of their qualifications and reputations. At the present time, there is no licensing procedure or other pre-qualification or certification process for air monitoring/testing firms—state or otherwise. Serious questions have been raised about the qualifications of these firms.

Health inspections on job sites this summer have questioned the integrity of air sampling regimes of some of these firms, indicating that many samples were taken in dead air space instead of employing aggressive air sampling, which simulates a normal building operational environment. In additon, inspections have revealed that many of these firms' technicians on job sites are high shcool and college students employed for the summer. Many are not trained in proper sampling techniques nor do they have a comprehensive understanding of the asbestos removal process.

Inspectors and others have also reported that some firms hired to do air sampling do not show up on the job, but their air test results somehow materialize; and some firms set up their pumps and related equipment and then disappear from the job site.

Again, one reason for questionable air sampling procedures is the large number of asbestos removal projects taking place this summer. Even the firms with good reputations are experiencing difficulties in providing reliable and competent service due to the fact that they are totally over-extended. A quick review of the job sites this summer shows that four air monitoring/testing firms in the state are conducting air sampling and quality control activities for most of the 300 schools—one firm, for example, has been hired to provide these services at 71 schools in the two month period.

There has been no state agency willing, this summer, to assume the important responsibility of coordinating and administering the inspection of work in progress at the 300 school asbestos removal sites. Indeed, as stated before, there is much confusion among state, federal, and local agencies concerning their individual responsibilities and authorities. This confusion has resulted in the late implementation of an inspection program which has not been able, due to inadequate resources, guidance and information, to provide meaningful assurance that these removals and final clean-ups have been conducted properly.

The authority of state and local health officials to inspect school asbestos removal sites has been called into question by contractors and their attorneys and some school board personnel, as discussed before, who claim that they are only obligated to respond to notice of non-compliance issued by the Department of Education. This question of authority has impeded the inspection process and, in some cases, has even placed certain county health inspectors under the threat of legal action if they interfere with the contractual relationship between a school board and contractor.

The Public Advocate recognized these problems early in the summer and attempted to fill the void by assisting in the coordination of the inspection program. In addition, our Department facilitated meetings between governmental agencies with common interests to resolve particular asbestos related problems; met with various groups of experts with specific knowledge of asbestos removal activities, such as air monitoring/testing firms and architects, to gather data and solicit recommendations for policy change; and handled numerous telephone inquiries and complaints ranging from waste haulers who want to know where to dump the asbestos, to homeowners asking for the names of reputable contractors to remove pipe insulation in their

basements, to parents wanting to know if their school districts are involved in asbestos abatement projects this summer.

The Department of Education also recognizes these problems and, in fact, discussed them in its asbestos proposal, which was included in the introductory report to the committee mentioned earlier. The Department stated in part:

"It appears to us that no single agency is responsible for the administration of a state-wide asbestos abatement program for New Jersey school districts. The Departments of Health, Environmental Protection and Education have cooperated in resolving asbestos issues. . . . Cooperative efforts, however, by their very nature often lead to important matters falling through the cracks. . . . Our major overriding concern is protecting the health and safety of children in our schools. It is our understanding that given same rate of exposure to an airborne pollutant that children, because of their size and breathing rates, would be exposed to greater danger than adults. Given this premise you can understand our concern about the potential threat posed by asbestos fibers."

## RECOMMENDATIONS

Following are some of the issues the Public Advocate feels must be addressed by the State Asbestos Policy Committee, the Legislature, and various state agencies in order to assure that the problems concerning asbestos removal in the public schools in New Jersey can be avoided in the future.

1. State implementation of a stringent asbestos removal contractor pre-qualification program which includes a workable procedure for performance evaluation and debarment.

2. State licensing of asbestos removal contracting firms, asbestos removal workers, air monitoring/testing firms, technicians and laboratories.

3. Establishment of state standards for the identification of asbestos in schools and other public buildings and risk-assessment based on up-to-date scientific and technical data.

4. State adoption of appropriate minimum specifications for asbestos removal in schools and other public buildings.

5. Waiving of the low-bid requirement for school boards in order that they may hire qualified asbestos removal contractors who will conduct removals properly.

6. Provision of state and local agency enforcement powers and the ability to levy inhibitory fines on contractors and other firms found to be conducting improper asbestos removal activities in the schools and other public buildings, in non-compliance with contract specifications.

7. Establishment of adequate staffing and equipment of a state-wide inspection program designed to provide reliable inspections of asbestos removal work in progress at schools and other public buildings.

8. Establishment of a comprehensive training program for state and local asbestos removal inspectors.

9. Development and implementation of a public education program on asbestos identification, risk-assessment and removal procedures for school administrators, boards of education, parent-teacher associations, architects, teachers, and other interested groups.

10. Designation by the Governor of a single state agency to direct, oversee, and administer the State's overall responsibility for asbestos management in schools and the implementation of the policies developed by the State Asbestos Policy Committee.

11. Consultation by the Committee with contractors, architects, testing firms, public interest groups, and other professionals in the asbestos management field to ensure "real world" relevancy of the policies, standards, and regulations the committee recommends.

12. The state and local governments, through the Departments of Education and Health, and the local school boards, share responsibility for ensuring that school buildings are safe and free of unreasonable health hazards. The Public Advocate recommends that the state assume its responsibility, in cooperation with these three entities, to devise a strategy for ensuring the safety of the 300 school facilities that have undergone asbestos removal this summer.

We recommend that this strategy include a careful review of test and visual inspection results; financing and conducting of additional air tests and visual inspections where inadequate clean-up is suspected and delay granting certificates of occupancy where any reasonable doubt exists as to the safety of school facilities.

## CONCLUSION

We at the Public Advocate recognize that you face a difficult task in addressing a complex and emotional issue in the current atmosphere of nation-wide concern about the health threat posed by asbestos, especially in our public schools. Your review process and recommendations for a state asbestos policy will be closely scrutinized by the public and governmental officials in New Jersey, in other states and on the federal level.

The Public Advocate's intent is to assist you by preparing recommendations that seek to improve the quality of health and safety in our schools and public places.

Thank you for this opportunity to present this testimony today.

# Asbestos Abatement Program



**Public Buildings Service**
September 1984

# RECAP

GOAL: To provide a safe and healthy working environment.

BACKGROUND: Established control program in 1979.
Surveyed inventory from 1980 to 1982.

FINDINGS: Of 2,500 buildings surveyed, 252 contained asbestos, and 45 had some friable condition.

GSA ACTION: Instituted control procedures.
Developed containment/removal plan.

# GSA INITIATIVES

(update: 9/84)

## CONTROL PROCEDURES

- Obtained NIOSH Report on 450 Golden Gate
- Established pilot project at 450 Golden Gate
- Working closely with EPA, OSHA, NIOSH and NBS
- Established a Management Control Task Force

## COMMUNICATIONS WITH CLIENTS

- Briefed client/agencies in 450 Golden Gate
- Developing slide presentation and notices for Federal workers

## CONTAINMENT/REMOVAL PLAN

- Accelerating future projects

# CONTAINMENT / REMOVAL PLAN
(update: 9/84)

OF THE 45 PRIORITY PROJECTS:

| | |
|---|---|
| COMPLETED | 13 PROJECTS |
| FY '84 | 4 PROJECTS |
| FY '85 | 5 PROJECTS |
| FY '86 | 3 PROJECTS |
| FY '87 | 1 PROJECTS |
| FY '88 | 1 PROJECT |
| FY '89-90 | 18 PROJECTS |

# REPAIR AND ALTERATION INVENTORY

## National totals (in millions of dollars)

| | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | Totals |
|---|---|---|---|---|---|---|---|
| Basic repairs | 185.2 | 161.0 | 176.6 | 180.5 | 76.2 | 12.3 | 791.8 |
| Improvements to space | 35.4 | 62.8 | 71.6 | 46.8 | 48.3 | 17.7 | 282.6 |
| Fire/safety | 37.2 | 65.7 | 45.4 | 30.2 | 16.7 | 3.6 | 198.8 |
| Asbestos control | 4.8 | 5.1 | 51.5 | 115.1 | 10.8 | 14.3 | 201.6 |
| Handicapped accessibility | 3.6 | 1.7 | 1.4 | .7 | .4 | 0 | 7.8 |
| Environmental protection | .2 | 5.9 | 2.4 | 0 | 0 | 0 | 8.5 |
| Energy retrofit | 3.9 | 13.6 | 10.0 | 9.3 | 4.4 | 7.2 | 48.4 |
| Totals | 270.3 | 315.8 | 358.9 | 382.6 | 156.8 | 55.1 | 1,539.5 |

CONTAINMENT/REMOVAL PLAN
45 PRIORITY BUILDINGS

| BUILDING NAME AND LOCATION | ORIGINAL PLAN FY START | FY COMPLETE | CURRENT STATUS START | COMPLETE |
|---|---|---|---|---|
| A | | | | |
| FB/CT, 450 Golden Gate, San Francisco, CA | 86 | 90 | On Schedule | |
| FB, Pittsburgh, PA | 85 | 89 | " | " |
| FB, Miami, FL | 86 | 90 | " | " |
| FB/PO/CT, Raleigh, NC | 86 | 90 | " | " |
| FB, Charleston, SC | 86 | 90 | " | " |
| FB/NARS, Philadelphia, PA | 85 | 86 | " | " |
| Border Station, Brownsville, TX | Completed | | | |
| Wiscon FB, Bethesda, MD | Completed | | | |
| Butler Hut C, Suitland, MD | Completed | | | |
| 42 Eye, Washington, DC | Completed | | | |
| ERDA, Germantown, MD | Completed | | | |
| FRC, Overland, MO | Completed | | | |
| FB, 11000 Wilshire, Los Angeles, CA | 86 | 90 | " | " |
| B | | | | |
| FB/CT, 26 FED PL, New York, NY | 87 | 91 | 86 | 90 |
| Celebrezze FB, Cleveland, OH | 85 | 89 | On Schedule | |
| PO/CT, Juneau, AK | 87 | 91 | 86 | 90 |
| FB, Buffalo, NY | 86 | 90 | On Schedule | |
| Rodino FB, Newark, NJ | 86 | 90 | " | " |
| CT, Bridgeport, CT | Completed (Phase I) | | 86 | 88 (II) |
| Old EOB, Washington, DC | Completed | | | |
| FB, Charlottesville, VA | 85 | 86 | On Schedule | |
| SSA, Woodlawn, MD | 83 | 84 | Completed | |
| D | | | | |
| NIC 2, Suitland, MD | Completed | | | |
| E | | | | |
| FB, Kansas City, MO | 87 | 91 | 86 | 90 |
| Dirksen FB, Chicago, IL | 87 | 91 | Reassessed | |
| Fallon FB, Baltimore, MD | 85 | 89 | On Schedule | |
| Cellar FB, Brooklyn, MD | 87 | 91 | 86 | 90 |
| FB, Jacksonville, FL | 86 | 90 | On Schedule | |
| DFC 20, Lakewood, CO | 83 | 87 | " | " |
| FB/CT, Billings, MT | 85 | 86 | " | " |
| FB, Augusta, ME | 84 | 88 | Completed | |
| FB #2, Arlington, VA | 84 | 84 | 84 | 85 |
| White House, Washington, DC | Completed | | | |
| Commerce, Washington, DC | 84 | 84 | Completed | |
| FB #6, Washington, DC | Completed | | | |
| Hoover Library, West Branch, IA | 85 | 85 | On Schedule | |
| DFC 710, Lakewood, CO | 84 | 87 | Completed | |
| FB #8, Washington, DC | Completed | | | |
| F | | | | |
| FB/CT, Denver, CO | 87 | 91 | 86 | 90 |
| FB/PO/CT, Omaha, NE | 84 | 88 | On Schedule | |
| FB/PO, Casper, WY | 84 | 84 | 84 | 85 |
| FB/PO/CT, Pine Bluff, AR | 84 | 89 | Reassessed | |
| GSA, Washington, DC | Completed | | | |
| FB/CT/PO, Cheyenne, WY | 84 | 84 | 84 | 85 |
| FB/PO, Bozeman, MT | 84 | 86 | 84 | 85 |

E.P.A. ASBESTOS STUDY

Three months ago EPA initiated action to determine if asbestos fibers were present in EPA occupied space.

Based upon survey results, EPA outlined a plan to deal with situations they found.

From EPA's 273 facilities, 220 were targeted for immediate survey with 53 deferred until the 220 were complete.

Preliminary results show 42 buildings of the 202 contain asbestos.

12 of the 42 contain sprayed or troweled material in EPA occupied areas (friable).

From the 202, 12 were surveyed that EPA has not yet received reports. 7 are probably under GSA.
6 GSA owned and 15 GSA leased buildings, in which EPA has space, contain asbestos.

There are 3 GSA owned and 4 GSA leased buildings in EPA survey which contain friable material.

GSA has visited 6 owned buildings with EPA and 11 leases. We have not received reports, or visited 4 leases.

| Region | Leased Gov. Own | Facility | Findings | Action Planned |
|---|---|---|---|---|
| NCR | | Waterside Mall | | |
| R1 | L | Analex Bldg. | Some asbestos on floor in fan room - some pipe lagging | Removed |
| | G | J.F.K. FB Boston | Friable fireproofing Exposed encapsulated in basement | restricted activity - notification - contract compliance - |
| R2 | G | Javits FB NYC | Sprayed fireproofing | Replace ceiling tiles - moratorium on work - O&M agreement |
| R3 | L | Curtis Bldg. Philadelphia | Basement. In office office areas no exposure problem | Relocation in Dec. - Interim controls - Removed |
| | L | 841 Chestnut Philadelphia | Boiler room in basement | Lessor removed |
| | L | 1610 Warwood Wheeling, WV | Boiler room in basement | Removed |
| | L | Metho Dist. Bldg. Wheeling, WV | Pipe lagging Small damage | Removed |
| R5 | G | 536 S. Clark Chicago | Pipe lagging - some minor damage | Repair lagging - endorse steampipes - O&M plan of admin - notify employees - report to 5A - GSA |
| R6 | L | 722 M:NN Ave. K.C., MO | Damaged pipe lagging and insulation | Removal & sealing by lessor |
| | G | 210 Walnut Des Moines, IA | Pipe lagging okay - Some panels have asbestos water damage | Replace damaged panels advise workers |
| R7 | L | Main Tower Dallas, TX | Exc. Condition Fire-proofing - slight friability | Removal before move in moratorium - O&M plan - |
| | L | 1st International Dallas, TX | Exc. Condition Fire-proofing - slight friability | Post - notify employees Evaluate total removal (1-3 yrs) Plan of action |
| R8 | G | Bldg. 55, DFC Denver, CO | Fireproofing on con-crete deck - some damage - In air plenum | Removal - moratorium - O&M control |
| | L | Lincoln Tower Denver, CO | Firm granular material- Delamination - damage - No Air plenum - perfor-ated ceiling tile-remod-eling damage | O&M control - work practices - notification<br>Post-coordinate |

| Region | Leased Gov. Own | Facility | Findings | Action Planned |
|---|---|---|---|---|
| R9 | L | 215 Fremont San Francisco, | Damaged pipe Lagging | Repair and correct damage |
| | G | Fed. Center Sacramento, CA | Damaged pipe lagging | Repair and correct damage |
| R10 | L | Yeon Bldg. Portland, OR | Ceiling tile & pipe lagging | Lessor resolve lagging within 30 days |

EPA Plan of Action

1. Develop Operation and Maintenance plan for the space
   - Wet clean - HEPA vacuum
   - Appropriate Safety procedures and equipment
   - No suspended items from ceiling
   - Annual reinspection and reevaluation
   - Coordinate with other occupants
   - Brief maintenance personnel
   - Perform work alterations
2. Removal and abatement plan - 1 to 3 years
3. Moratorium on construction activities
4. Post areas containing asbestos
5. Notification to employees
6. Control contractor activity and compliance

GSA Plan of Action

1. Immediate removal where possible
2. Abatement plan of action
3. Interim controls
4. Initiate posting procedure and method
5. Notify occupants regarding asbestos
6. Control contractor/employee activity
7. Oversight contract compliance

| | | |
|---|---|---|
| * | JFK - Boston | Sprinkler installation and removal in one project - Remove in basement |
| * | Javits - NYC | Removal |
| | 536 Clark - Chicago | Notify - Repair - Control |
| | FB - Des Moines | Monitor pipe lagging and replace some lobby ceiling panels |
| | Bldg. 55 - Denver(DFC) | Remove - Start 8/85 - finish 11/85 |
| | Federal Center - Sacramento | Repair damage to pipe lagging |

PSA/R. MAISCH/ 10/1/84

FACT SHEET

Subject: Asbestos in Leased Building at Pesearch Triangle Park, NC

- Under authority delegated by GSA in 1968, the Department of HHS entered into a 10-year lease with a 10-year renewal option on a building at Research Triangle Park, North Carolina.
- The building is currently occupied by the National Center for Health Statistics (NCHS).
- EPA moved out this summer due to the condition of the asbestos in the building.
- NCHS wants to remain in the building and has asked GSA for authority to renegotiate a new 10-year lease with 2 five year options because asbestos control was not envisioned in the original lease.
- The lessor proposes removing the asbestos. In the meantime, the building air is being exhausted 100%, rather than recirculated.
- There are no known local laws or regulations that apply to asbestos in the building.

ORM

O. R. MAISCH
PSA
September 19, 1984

FACT SHEET

Subject: GSA Manpower devoted to Asbestos Abatement

From a review with Regional management, the following is a rough estimate of the workspace that has been devoted to asbestos abatement in 1930 and 1934:

| | 1980 | 1984 |
|---|---|---|
| Direct | 6.4 | 10.8 |
| Indirect | 1.1 | 3.2 |
| Total | 7.5 | 14.0 |

This estimate includes all offices directly or indirectly involved in executing the Asbestos Abatement Program.

FACT SHEET

ASBESTOS ABATEMENT - CONTRACTOR and

LABORATORY QUALITY ASSURANCE

1. Background:

Asbestos abatement work most be performed under carefully controlled conditions. The area must be sealed off, and air both inside and outside the work area must be monitored at four hour intervals while work is in progress. It is therefore essential that both the contractor doing the work and the laboratory taking the air samples be well qualified.

2. GSA Action:

a. Contractor Qualifications: Because it is so new, no certification program has, to date, been established for contractors. However GSA requires the contractor to have an established record of successful performance on asbestos abatement and requires it to submit proof of successful performance with the bid, including name and address of previous clients and records of air monitoring on previous jobs.

b. Laboratory Qualifications: Laboratories must submit proof of qualifications in the form of accreditation by the American Industrial Hygiene Associations (AIHA) for asbestos work, as well as proof that persons counting samples have been judged proficient through the Proficiency Analytical Testing (PAT) program of the National Institute of Occupational Safety and Health (NIOSH).

44-055 O—85——2

EXECUTIVE DOCUMENT SUMMARY

SUBJECT:

Involvement of Federal Construction Council (FCC) for asbestos evaluation.

BACKGROUND AND DISCUSSION:

The Federal Construction Council (FCC) is a continuing activity of the Advisory Board on the Built Environment (ABBE) of the National Research Council (NRC). NRC is the operational arm of the National Academy of Sciences, a non-profit congressionally chartered organization, funded by Government and private grants. The purpose of the FCC is to promote cooperation in Federal construction agencies and among such elements of the building community in addressing technical issues of mutual concern.

ABBE consists of several technical committees that assist the Federal agencies in preparing research reports, studies, and evaluations of types of building systems and components. Recently the FCC completed studies on "Energy monitoring and control systems", a workshop on Building Diagonistics and "identifying and solving asbestos problems in existing Federal Buildings."

Asbestos being of interest and concern to all the Federal agencies and the public would be a subject of mutual interest.

The sponsors of the FCC is from the Federal Government and the private sector. The Federal membership encompasses all the major agencies involved in construction, such as:

- o Departments of the Army, Navy and Air Force;
- o General Services Administration;
- o Veterans Administration;
- o Department of Energy;
- o Health and Human Services; and
- o National Bureau of Standards
- o National Air and Space Administration
- o Department of State.

PCDE:VIJAY GUPTA:9/24/84

Mr. YOUNG. Please proceed.

**TESTIMONY OF HOWARD M. MESSNER, ASSISTANT ADMINISTRATOR FOR ADMINISTRATION AND RESOURCES MANAGEMENT, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY JOHN CHAMBERLIN AND MARCIA E. WILLIAMS; LESTER L. MITCHELL, COMMISSIONER, PUBLIC BUILDINGS SERVICE, GENERAL SERVICES ADMINISTRATION, ACCOMPANIED BY WILLIAM LAWSON; ROGER P. CRAIG, ASSISTANT POSTMASTER GENERAL, REAL ESTATE AND BUILDINGS DEPARTMENT, U.S. POSTAL SERVICE; DR. JAMES MELIUS, CHIEF OF HEALTH HAZARDS EVALUATION BRANCH, NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH, ACCOMPANIED BY RICHARD LEMEN; JOHN F. WELCH, PRESIDENT, SAFE BUILDINGS ALLIANCE; AND GENE BREWER, PRESIDENT, NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS), ACCOMPANIED BY WAYNE ELLIS, FORMER CHAIRMAN, AMERICAN SOCIETY OF TESTING MATERIALS**

Mr. MESSNER. Thank you, Mr. Chairman. I appreciate this opportunity to appear before your committee. I would like to introduce Marcia Williams, Deputy Assistant Administrator of the Environmental Protection Agency for the Pesticides and Toxic Substances Program. On my right, John Chamberlin, Director of Administration of the Environmental Protection Agency.

I am responsible for the internal operations of EPA. I am its Managing Director. The contribution I think I can bring to the committee is to share with you some of our own findings in our surveying of asbestos problems in EPA facilities. Let me begin by saying that it is a pleasure to share this table with Les Mitchell, Commissioner of the Public Buildings Services. He and I have worked together over many years in Federal service and in particular we have worked very hard to coordinate our efforts on asbestos and the support that the General Services Administration has given to EPA in this particularly difficult situation. It is exemplary of the cooperation that I think would please the committee.

We know in EPA about asbestos. It is a serious health hazard when people inhale even minute fragments of the material. That means that the greatest potential asbestos danger to people comes from those forms of the material that may easily break down into small fibers. This is technically referred to as friable asbestos. It is found applied to ceilings, walls, structural members, piping, and duct work.

While it is in its latent form, that is, intact on those exposed surfaces, it is not a real and eminent health hazard. But if it becomes dislodged and enters the air handling equipment or into the ambient air around employees, it can be a very serious matter. I said EPA has a special concern about asbestos. It is because we have in addition to responsibility for our own employees, substantive involvement in the care of society in general in this field, through our Asbestos in Schools Program.

We have played an active role in asbestos activities since 1979. At that time, the Office of Pesticides and Toxic Substances established a program to provide needed information to schools on how

to identify and deal with any asbestos situations. In 1982, EPA promulgated a rule requiring that schools inspect for asbestos and notify parents when asbestos is found. EPA believes that it would be very inappropriate to expect numerous schools to perform these inspections and not to subject ourselves and our own facilities to similar standards.

Therefore, the Deputy Administrator of our Agency directed that I undertake a study of all of our facilities. I would like to spend just a minute or two on what we found because I think it is helpful.

Of the Agency's 273 facilities, we have reviewed, and are in the process of secondary level reviews of 220 buidings. Fifty-three facilities were deferred for later inspection so we could get on specifically to areas that have employees occupying the space. Our Occupational Health and Safety staff coordinated what amounted to a 3-month survey, assuring that the sampling and inspection procedures used were consistent with EPA's published guidance on the subject.

By mid-August, the preliminary survey results were ready for the Deputy Administrator: Inspections and sample analysis had been completed for 202 of the originally scheduled 220 buildings; 43 facilities were found to have asbestos-bearing materials. The final survey results showed 49 facilities; 12 of these buildings had sprayed or troweled on friable asbestos materials in occupied space. Those 12 facilities took on a very important characteristic to us.

What that amounts to is approximately 20 percent of the facilities EPA occupies either through its own authorities, through construction or lease, or through the GSA, had asbestos. Twelve of those buildings had asbestos in areas that were occupied by employees. The other areas were storage rooms and other unoccupied space. We undertook a communication plan with our employees. Needless to say to you of this committee, our employees pay particularly close attention to issues of environmental hazard and asbestos in particular since they have the technical skills to make sure the job of the facilities director and head of administration is very carefully done indeed.

We provided employees, and I would like to provide for the record, the materials on the survey we took. We have kept them informed in a reasonable way. We have kept them informed of the steps we are taking. And it has been very well received by our employees. There is a sense in the Agency that we are working to solve our problems.

[The following was received from Mr. Messner:]

[Memorandum]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Washington, DC, August 24, 1984.*

Subject: Asbestos in EPA Facilities.
From: Alvin L. Alm, Deputy Administrator.
To: All employees.

Three months ago as part of EPA's asbestos-in-buildings program, I asked for a survey of EPA facilities to determine whether we had asbestos in our buildings. I now want to report the preliminary results of the survey to you and outline our plan to deal with the asbestos that we found.

Preliminary results on 202 buildings indicate that about 20 percent of 42 of EPA's facilities contain some type of asbestos-bearings materials. In 80 percent of EPA's

buildings no asbestos containing materials were found. I have already sent a memorandum to the Assistant Administrators, Regional Administrators and lab directors regarding these facilities. They will keep you informed of any developments in your building.

There is no need for undue concern among our employees. Asbestos poses a health threat only when it becomes airborne and we do not expect this situation to be prevalent in the overwhelming bulk of situations. Our follow-up actions were focused first on buildings where friable sprayed or troweled on asbestos is present in occupied spaces. We will make sure that any asbestos which could become airborne and pose a threat to employees will be removed or sealed to eliminate the exposure. If any hazard exists from airborne asbestos, we will take immediate action to protect employees, including temporary relocation.

Several technical teams from the Regions and Headquarters will assess the condition of asbestos in these facilities. The inspection teams will recommend corrective actions for any immediate hazards they identify. If the asbestos conditions are not creating an immediate hazard, the inspectors will assess the need for future corrective actions. For all EPA facilities which are found to contain asbestos, a special operations and maintenance plan will be developed. This plan will be developed in consultation with EPA's Regional Asbestos Coordinator. The teams will brief the local leadership on conditions in your buildings immediately after they complete their inspections.

The teams began their inspections on August 22; they will finish the first group of buildings by August 29. This first group contains all buildings that were found to contain sprayed or troweled asbestos in occupied areas, and we expect them to complete the remaining 30 buildings before the end of September.

Attachment.

## EPA FACILITIES CONTAINING SOME TYPE OF ASBESTOS-CONTAINING MATERIALS

[Survey results as of Aug. 1, 1984]

| Location | Building ID | Name and address |
|---|---|---|
| | | GSA—LEASED |
| HQ | 0.1 | Waterside Mall, 401 M St., S.W., DC. |
| R-1 | 1.3 | Analex Bldg., 1450 Causewat St., Boston, MA. |
| R-3 | 3.6 | Curtis Bldg., 625 Walnut St., Philadelphia, PA. |
| R-3 | 3.7 | No Name, 1610 Warwood Ave., Wheeling, WV. |
| R-3 | 3.8 | Methodist Bldg., 11th & Chagline Sts., Wheeling, WV |
| R-3 | 3.12 | No Name, 841 Chestnut Street. |
| ORD | 4.11 | University Sq. Plaza, 143 W. Franklin St., Chapel Hill, NC. |
| ARD | 4.12 | NC Mutual Life Ins., 411 Chapel Hill St., Durham, NC. |
| R-6 | 6.6 | First International, 1201 Elm St., Dallas, TX. |
| R-6 | 6.7 | Monterey Pk Plaza, 6600 Hornwood Dr. Houston, TX. |
| R-7 | 7.2 | No Name, 25 Funston Rd, Kansas, KS. |
| R-7 | 7.9 | No Name, 722 Minn Ave., Kansas City, KS. |
| R-8 | 8.1 | Lincoln Tower, 1860 Lincoln St., Denver, CO. |
| R-9 | 9.3 | No. Name, 215 Fremont St., San Francisco, CA. |
| | | GSA—Federal |
| R-2 | 2.4 | Jacob K. Javits F.B., 26 Federal Plaza, New York, NY. |
| R-5 | 5.1 | Federal Building 536 S. Clark, St., Chicago, IL. |
| R-6 | 6.11 | Main Tower, 1200 Main Tower, Dallas, TX. |
| R-7 | 7.1 | Federal Building, 210 Walnut St., Des Moines, IA. |
| IG | 9.2 | Federal Center, 801 I St., Sacramento, CA. |
| Enf | 8.13 | Bldg. 55, Federal Center, Lakewood, CO. |
| | | EPA Leased |
| OPTS | .4 | Laboratory Bldg. 306, Beltsville, MD. |
| OPTS | .5 | Building 402, Beltsville, MD. |
| OPTS | .8 | Building 409, Beltsville, MD. |
| OPTS | .9 | Building 405, Beltsville, MD. |
| ORD | 3.11 | Vint Hills Farm Station, Warrenton, VA. |
| OPTS | 4.83 | Bay St. Louis, Naga, MS. |
| | | EPA owned |
| ORD | 5.21 | Fish Toxicology Station, Newton, OH. |
| OAR | 5.23 | Woodworking Shop B-23, 9311 Gross Rd., Gross Ile, MI. |

EPA FACILITIES CONTAINING SOME TYPE OF ASBESTOS-CONTAINING MATERIALS—Continued

[Survey results as of Aug. 1, 1984]

| Location | Building ID | Name and address |
|---|---|---|
| OAR | 5.25 | Boat/Repair Shop B-22, 9311 Gross Rd., Gross Ile, MI. |
| ORD | 6.9 | ADA Research Park Annex, Kerr Water Research Ctr., Ada, OK. |
| ORD | 6.10 | ADA Research Park Annex (Main Building), Kerr Water Research Ctr., Ada, OK. |
| ORD | 9.12 | EMSL, Univ of Nevada at Las Vegas, Executive Center, Las Vegas, NV. |
| ORD | 10.6 | Environmental Research Lab (Main Building), 200 S.W. 35th St., Corvallis, OR. |
| ORD | 10.16 | Western Rish Toxicology Station, 1350 S.E. Goodnight Rd., Corvallis, OR. |
| ORD | 1.7 | Nat. Marine Water Quality Lab, S. Ferry Rd., Narragansett, RI. |
| -2 | 2.13 | Edison Regional Lab, Building 209, Woodbridge Ave., Edison, NJ. |
| R-2 | 2.15 | Edison Regional Lab, Building 205, Woodbridge Ave., Edison, NJ. |
| ORD | 4.53 | Gulf Breeze Lab, Computer Lab, Gulf Breeze, FL. |
| ORD | 4.71 | College Station Rd, (Main Building), Athens, GA. |
| ORD | 4.87 | Nat. Center for Health Station B-C, Davis Dr., RTP, NC. |
| ORD | 4.88 | Nat. Center for Health Station B-A, Davis Dr., RTP, NC. |
| OAR | 4.90 | Camios Building, 225 S. Magnum St., Durham, NC. |
| ORD | 5.12 | No Name, 6115 Congdon Blvd., Duluth, MN. |
| OAR | 5.15 | MVEL, 2565 Plymouth Rd., Ann Arbor, MI. |

[Memorandum]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Washington, DC, October 10, 1984.*

Subject: Weekly activity report—week ending October 12.
From: Gary M. Katz, Director, Management and Organization Division.
To: John C. Chamberlin, Director, Office of Administration.

*Management support contract.*—We met with representatives of the Veterans Administration to discuss their use of our contract to conduct a study of ADP and telecommunications management in the VA. VA expects to have a similar management support contract in place soon. In the meantime Howard has offered to let them task our contract. This will be funded by an interagency agreement.

*OMB organization and structure work group.*—In response to an OMB request, we arranged for an interagency group to meet with OMB representatives to discuss model organizations for Assistant Secretaries for Management.

*Review of TSCA test rules process.*—On Oct. 9 M&O prepared and submitted to Seymour a brief report on its review of the TSCA § 4 Proposed Test Rule Process for Al Alm. In it we proposed several short-term modifications and longer range considerations which could streamline and shorten the process.

*"Deputies" policy memorandum.*—M&O is preparing for Seymour's signature a memorandum to the AA's and RA's outlining the procedural requirements needed to monitor EPA's progress toward eliminating 20 deputy director positions at the division level and above. A draft is being reviewed by PMD and OHRM.

*National dioxin study.*—This week we will forward for Al Alm's signature a delegation of authority to the RA's which will enable them to approve grants as part of the National Dioxin Study. The grants are to assist states and interstate water pollution control agencies in determining the extent of dioxin contamination through investigation and sampling programs.

*AA/OPTS reorganization.*—We have received, analyzed and circulated the proposed reorganization of Jack Moore's immediate office and elevation of the Compliance Monitoring Staff to Office status. Comments on the package are due 10/19.

*Reorganization in OIRM.*—The OIRM reorganization was approved on October 5. It creates a Program Systems Division by combining a branch of the Information Systems Division with a branch from the Office of Water's Monitoring and Data Support Division and its consolidates the functions of the Information Management and Services Division into two branches.

*Region IV reorganization.*—The Region IV reorganization was approved Oct. 1.

Mr. MESSNER. The proportionate concern has been reasonable. The employees have behaved extremely well and I think management has behaved responsibly. I would say to you that during all of these efforts, particularly in the 12 buildings where we were vivid-

ly concerned that asbestos was in a friable form and may have been disturbed in places our employees work, I have worked very closely with Les Mitchell and his staff. I provided him on a daily basis with information on what our procedures were and how we were proceeding.

His staff accompanied my staff and our technical people on a number of inspections, because we did a room-by-room inspection versus the general standards that are applied governmentwide. In two instances, one in North Carolina, which the chairman referred to, where we found that the asbestos was crumbling and potentially loose in the air, we asked Les and the Acting Administrator Ray Kline, for leasing authority to move our employees from that particular situation while it was cured. And they granted it immediately.

Subsequent to our surveys and inspections, we have met with Les Mitchell and his staff to develop protocols on how to deal with employees' anxieties which are a real problem for the Federal Government and at the same time deal with the specific problems of asbestos in the workplace. Now, I know that there are a number of very distinguished people at this table who could comment on the broader implications of asbestos in the workplace, but I wanted the committee to know that we have attacked the problem head on.

We have a technical competence in this problem area. We are not responsible for Federal buildings and their overall safety. We have responsibilities nationwide for toxic substances and have our hands full, as you know, with our mission statement. We do feel we have some special skills and have put them at the disposal of the GSA and we do have some special responsibilities in this field and are working very hard within the framework of the Government management system to make them work.

I believe Bill Ruckelshaus and Al Alm are satisfied that in the case of the Environmental Protection Agency employees and in the management of the asbestos problem we are contributing and the governmental program is in good hands.

Thank you, Mr. Chairman, for the time to give this presentation.

Mr. YOUNG. Mr. Messner, thank you for your fine statement. I find it interesting that EPA believed it to be inappropriate to expect schools to perform inspection for asbestos and not to subject itself to those same standards.

Further, I know on page 6, you state we continue to focus attention on the problem of asbestos in EPA facilities. I think it is nice for EPA to be so concerned about the health of its employees. However, I think it is time EPA showed equal concern for the children exposed to asbestos in schools as well as other Federal workers who are not employees of the Environmental Protection Agency.

The question is, What level of funding is EPA seeking in fiscal year 1986 budget for the asbestos in schools program? A recent article in the State Ledger newspaper in New Jersey states that EPA will distribute $50 million already appropriated by Congress under asbestos detection and removal law, but will not seek additional funding when the new budget is submitted.

As you know, earlier this year Congress appropriated and President Reagan signed a bill authorizing $600 million over 7 years to help school districts remove asbestos from their facilities. Would

you comment on this since I hope EPA is as concerned for the health of children as it is for the health of its own employees? What level of funding, Mr. Messner, is EPA seeking in fiscal year 1986 for the asbestos program in schools?

Mr. MESSNER. Let me start by assuring you that the concern EPA feels for the safety of not only children of the country, but all the citizens of the country is genuine and real. We have been very aggressive in our handling of the asbestos problem in the public school system. As you pointed out, Congress has added in the appropriations process a supplemental of some $50 million for the program.

There is a debate going on within the administration and the Congress over the overall funding for the program. We feel a commitment to making sure that nothing we do in budgeting toward this issue diminishes the actions, in many cases very aggressive actions, that are being taken as a result of local school boards using the information and technical assistance being provided to those PTA's and school administrators who are the front line of responsibiity for the asbestos problem.

Mr. ANDREWS. Would the chairman yield?

Mr. YOUNG. I yield to the gentleman from Texas.

Mr. ANDREWS. I wonder if you would just expand on that remark. What relationship do you see between the EPA and local school boards and how that relates to funding? I am not sure I really understood what you were just saying.

Mr. MESSNER. Let me take a try at it, Congressman, and then point out that I am not the technical manager of that program and want to preserve the right to provide you with more substantive answers. But I am interested in the program both as a manager of the EPA resource and as a private citizen. The strategies for the program called on local school groups to inspect their facilities.

We have made major efforts to make public the findings of those inspections. The quickest way to resolution is the local community's pressure on the school to take steps where necessary to remove or contain——

Mr. ANDREWS. Why is that the quickest way?

Mr. MESSNER. Because in a grant program we have found over the years you get a lot of queueing up. You get a lot of postponement of action by the local community in waiting for the Federal Government to provide funding. One of the things we have to consider is that a lot of work is going on right now by local school boards using local funds to cure this problem.

It could be, in an odd way, something of a disincentive if we imply to local boards that if they wait a couple of years the Federal Government will provide them with funds for a task that has to be done now. Let me just say that I am not in a position to comment substantively on all of the aspects of the program and I would be glad to make sure that you get information from the substantive people running it.

Mr. ANDREWS. I would like to and I want to yield back my time, but I do think this is an area that I would really like to explore more. I have some real problems with EPA taking the position we are not going to act because we will send the wrong signal to some local school board.

They may not go forward because they think we are going to act and fund the program in the next 12 months or 24 months. That seems almost like a catch-22 system. The problem is immediate, especially as it relates to young children. The EPA has a strong and important leadership role. And I think, thirdly, and I think all of you would probably concur with this—a real need for consistent standards to be established around the country.

I would submit that probably none of us know. In my statement of Texas, for instance, how aggressive the school system is in the Brownsville area in the valley as opposed to in the Eastern Independent School District, what their steps have been, what their success and problems are.

I think that relates back to a lack of overall standards and it concerns me that the EPA may be taking a position of, let's don't move aggressively and quickly now. Let's let these local school boards and at the same time maybe we as a congress have not developed appropriate consensus standards around the country.

Mr. MESSNER. Congressman, I wonder if I could take a minute to turn to my colleague, Marcia Williams, Deputy Assistant Administrator in charge of the toxic substances area, and let her comment on your remark.

Ms. WILLIAMS. Thank you. Let me try to give a relatively brief answer. But I believe our program is working. When we put a rule out in May 1982 which required schools to inspect for asbestos, that was a key first step and made everybody go in and look to see whether or not there was or wasn't a problem and to identify whether or not further action was going to be necessary.

Since that time, we have put a very aggressive enforcement program together to make sure those inspections happen. Without those inspections that key first step hasn't happened. We have also continued to put together another extremely strong technical assistance program, putting out all kinds of materials that the schools identify when they have a problem and what are their options for dealing with the problem.

So those programs continue to grow over the last 2 years as we have been dealing with this problem. The reason I say that I believe that our program is working is because in situations where schools have found asbestos, two-thirds of those schools have already taken actions to abate the problems they found.

And an additional 23 percent of those schools have plans already on the books today to take action. I think those are fairly impressive figures. They are not perfect. But I think it shows we have made amazing strides in order to address a problem that is a big problem.

Mr. ANDREWS. One more quick question, because this is not my time, but are you satisfied that the standards around the country are consistent; that that 23 percent that hasn't responded or the majority that have, are all going by the same standards of what is healthy and what is unhealthy for the children?

Ms. WILLIAMS. I believe that the technical assistance materials that we have put out and that we continue to update as we develop new information are quite excellent and I think we have had peer review of these documents from large numbers of people outside of the Agency. I think to ensure the consistency we would all like to

see, we have to continue to have a strong enforcement program and strong technical assistance program.

I would say we are doing a very credible job given where we started from 2 years ago, yes.

Mr. ANDREWS. Thank you, Mr. Chairman.

Mr. YOUNG. Let's see where we are. Dr. Rowland.

Mr. ROWLAND. Thank you very much, Mr. Chairman. To what extent are the States involved in these programs now with reference to guidelines and what are they doing? Can you tell me that?

Ms. WILLIAMS. Well, again, I think the problem we are dealing with is clearly a problem that—it is a big enough problem that there is a role for everybody to play. I don't think there is a uniform answer to that question in terms of what is done in various States. Different schools are run in different ways, depending on the organization within each State.

Many of the States are quite active in, again, helping to provide technical assistance. Some States have started contractor certification regulations.

Mr. ROWLAND. We have somewhat of a logical position with no uniform method of dealing with the problem.

Ms. WILLIAMS. Again, I would just say various States have taken different tacks in terms of getting information out.

I will provide you with additional information.

Mr. ROWLAND. Thank you.

[The following was received from Ms. Williams:]

The following States have contractor certification programs: New Jersey, Maryland, Alabama, Oklahoma, Iowa. Each of these states has a regulation in place and requires licensing of contractors.

Consideration is being given to certification in other states: (1) Massachusetts—the governor will probably soon sign a bill authorizing establishment of a State Asbestos Control Board, which will be able to license contractors; (2) New York City—there is a training program, of about four hours, required for contractors bidding on abatement in city-owned buildings, but no licensing requirement; (3) Ohio is considering legislation, but has not passed a bill; (4) Texas Department of Health is considering development of contractor licensing program; (5) Colorado—a bill will be proposed in January requiring asbestos contractors to obtain a license. Utah and Colorado are also in preliminary stages of developing legislation for contractor certification. These bills may be introduced in the next legislative sessions in those States.

Mr. ROWLAND. Thank you, Mr. Chairman.

Mr. YOUNG. If the gentleman would yield?

Mr. ROWLAND. Yes.

Mr. YOUNG. The Services Employees International Union petitioned EPA under section 21 of the Toxic Substance Control Act of November 18, 1983, to initiate rulemaking procedures under section 9 of the SC-8 concerning abatement of friable asbestos containing materials in public and private elementary and secondary schools and inspection and abatement of these materials in other public and commercial buildings.

I understand EPA granted three of the petitioners' requests and has partially granted the fourth. Where is EPA in the rulemaking process?

Further, does this mean that EPA is going to accept the responsibility to be the lead agency and produce guidelines and standards for asbestos for use by the Government and the public?

Ms. WILLIAMS. EPA did grant that petition. And it is in the process now—we held a number of public hearings in the June/July timeframe. We are in the process now of summarizing the information that came into us from that public hearing process. We are developing a program.

I think one thing that is very important to state is that the goal of this problem and program we are working on is to take care of a problem. We want to take care of that problem in the fastest possible way.

Mr. YOUNG. When?

Ms. WILLIAMS. We think we are trying to do that now. That may involve rulemaking and it may not involve rulemaking. The key is to get the asbestos out in situations where it has to be taken out, which is not all situations.

Mr. YOUNG. But there are no guidelines out there.

Ms. WILLIAMS. Well, we believe that the technical information we have provided does provide guidelines for the identification of situations that are of concern and the options available for dealing with it. We will continue to try and develop what I would call guidelines for the identification of the most serious kinds of situations. But this is a very—unfortunately a very difficult area we are dealing with where it is not easy to write a very simple standard that says—a checklist approach. And if you have this, this, and this, then the proper action is to do this.

We have tried very hard. We have spent a lot of research money in trying to develop a very simplified standard like that and it hasn't worked. Therefore we have found what works better is to provide the best technical information we can through the kind of mechanisms we are providing, books, training. And we will be expanding those programs until they get out there.

Mr. YOUNG. What do you need to finish the guidelines? What does Mr. Ruckelshaus need over there to get the guidelines out so everybody can understand where we are?

Ms. WILLIAMS. I think it is a continuing process. I think some of what you are looking for is out there. What we have to continue to do is expand our education of all the people that need to understand the guidelines that are already available. As we continue to develop additional guidelines we are getting them out there.

That is being worked hard on and will continue to be worked on over the next 12 to 18 months. I think a lot of the information is there. I think we have to get it disseminated to the people who need to know it.

Mr. YOUNG. So Mr. Messner, did you tell me the amount of money that you were going to request, what level of funding for 1986? I didn't hear that.

Mr. MESSNER. No, Mr. Chairman. That information is still a subject of discussion with the Office of the President, Office of Management and Budget and won't be available until the President submits the budget in late January.

Mr. YOUNG. Well, I think we'd better follow that up. I will ask staff to follow that up.

Mr. MESSNER. Yes, sir.

Mr. YOUNG. With a letter to you so we can get some sort of idea.

Mr. MESSNER. We would be glad to discuss it.

Mr. YOUNG. Do you know what EPA is going to do about this problem? The recent trend has been for business and the public to favor less Government intervention and regulation. In the case of asbestos in schools and buildings, the public and even the businesses which manufactured the product are demanding the Government provide guidance, training, and information.

EPA is the Agency charged with this responsibility for protecting the public from such hazards. Why won't you all do it?

Mr. MESSNER. Mr. Chairman, we participate in the workplace with other people. You have noted that a number of other Federal agencies have a role. Our role is defined by the Congress and we are trying to provide technical guidelines. It has to be brought in together with the work of the Department of Health and Human Services who have some responsibility and General Services Administration who have some responsibilities.

That coordination, while it is going on, will cause some areas of question to remain.

Mr. YOUNG. It would seem to me that, having an idea of what is going on in our local school districts in the Metropolitan St. Louis area, trying to get any additonal funding for almost any purpose is almost an impossible situation. Maybe it is easier here in the District or Maryland or Virginia to pass tax increases that are needed, but in our area——

Mr. MESSNER. I understand.

Mr. YOUNG [continuing]. It is very, very difficult.

Mr. MESSNER. Mr. Chairman, we have available to us because of the action of the Appropriations Committee and the President's agreement, I believe, the $50 million which will be used to begin to ameliorate some of the situations that you are speaking of, but the approaches and strategies we used for this threat to the public health was very broad based, very open, very above board, very direct.

And in each of our regional offices we put a technical expert to work directly with the school systems in providing them information and assistance on the abatement procedures. So I think that given the newness of the kind of problem we are dealing with we are doing what can be done at the moment.

Mr. YOUNG. Just one more question so Mr. Shaw can proceed with his questioning: Recently EPA gathered information on the extent to which friable asbestos containing materials are present in public and commercial buildings. Is that survey completed? If so, are the results available for the public?

Mr. MESSNER. Mr. Chairman——

Mr. YOUNG. Consumption.

Mr. MESSNER. The EPA has undertaken such a survey and its results will be made available later this month.

Mr. YOUNG. Thank you. Mr. Shaw.

Mr. SHAW. Thank you, Mr. Chairman. I have before me a book called "Guidance for Controlling Friable Asbestos Containing Materials in Buildings" put out by EPA in March 1983. Is this the latest pronouncement we have of this type of publication from EPA?

Ms. WILLIAMS. Yes; that is the latest comprehensive guidance document.

Mr. SHAW. Will EPA be updating this material based on the additional information that has been put together in the last year?

Ms. WILLIAMS. We still believe that is quite an accurate up to date document, but we will be supplementing it with additional guidance on most serious hazard situations——

Mr. SHAW. In looking at the document you show the people engaged in either encasing the exposed asbestos, or removing it, are all in astronaut-type clothing, indicating to me that EPA puts a high priority on the safety of the worker who is involved in the abatement of asbestos.

This concerns me, however. I see a situation where in our rush to remove the asbestos we probably have a lot of fly-by-night operations that are sending a bunch of laborers in with a hoe or other crude types of equipment to scrape it down and then sweeping it up, half of it going into the air.

Then, too, we don't know where they are disposing of it. We have a situation, where I understand they come back with vacuum cleaners. We know what happens when you put that substance into vacuum cleaners. Whoosh, it is all back in the air and in many instances we are probably taking a situation which was not creating an immediate hazard, and by trying to remove it we turn it into something that is quite hazardous.

Where are we down the line on certification of the contractors? What does EPA expect this certification to include and what is your timetable?

Ms. WILLIAMS. EPA is working right now in that area because I think most importantly we totally share your concerns in this area. We are really focusing on two things. First, we are focusing on providing the kind of technical information that contractors should be taught in order to do the job the way they need to do it.

Second—well, I should say three things. Second, we are focusing on how to get that education mechanism in place. We are in the process of setting up three what we call pilot information centers that will in fact get that information out to the local level contractors that are doing this kind of work.

Third, we are going to be working with a number of States on a pilot basis to provide the materials so they can set up State-run certification programs. That is actively going on now and should be done within the next year.

Mr. SHAW. Then EPA views their responsibility as one of support to the State government and in some instances local government, in putting together this type of certification?

Ms. WILLIAMS. Yes; we see it as a partnership.

Mr. SHAW. Are we getting that information out now? I know after this hearing one of the things that I plan to do is go back to my office in the city of Fort Lauderdale and see how you get licensed to remove this stuff because this is what really concerns me. Not only here, but I am sure there are a lot of instances where some contractors would go in and tell someone that the only way to handle the situation is one of complete removal; then spending tens and hundreds of thousands of dollars, a consumer ripoff, when encasement would have been just as good and in some instances even safer.

How are we doing as far as getting that information out to State and local government about what they should be looking at, what their schedules should be and what track they are on?

Ms. WILLIAMS. Again, I think there are a number of ways in which we try to get that information out. I think all the points you raise are very important ones. One way, as Howard Messner mentioned, is we have regional asbestos coordinators and experts in each of our 10 regional offices that are available to consult with States or local school districts or public building owners in order to provide the kind of information and guidance as to what might be right in a particular situation.

Second, we are working on development of what I call information courses, packages, videotapes, all that kind of stuff that will be available for use by locality, States and so on to try and get the word out. All those things are being tried because I think only through the use of multiple techniques like that are we going to be able to get the word out.

Mr. SHAW. But are we communicating directly? Let me just ask you a specific instance. Are we directly communicating with building departments of the various cities throughout the country to advise them; one, of the tremendous hazard that is out there; and, two, the need for them to make recommendations to their city council on certification or whatever? We need some type of a model ordinance, if you may, on controlling the situation if we are going to get it done very quickly.

We are moving ahead in the area of public awareness. Any time you mention asbestos in the Congress, you are sure of some reporters being here. So, we are getting question of the problem out. But the real question I have, are we getting the question of the solution out so we are not just rushing to do the removal and perhaps creating more problems than we actually would have had we gotten our stuff together before the hysteria set in?

Ms. WILLIAMS. To answer your specific question, we are working on the design of a model ordinance or legislation that could be picked up by States to implement.

Mr. SHAW. I would also not rely totally on States. I would suggest strongly, you work closely with the building departments and legal system of the cities and the U.S. Conference of Mayors also. Perhaps even working with them at some of their conventions in putting together some type of seminars as to exactly what they should be doing.

They are the only ones who will come up with a solution. We come up with guidelines and everything else, but that doesn't mean the people out there are able to go forward.

Ms. WILLIAMS. That is a good point. Thank you.

Mr. SHAW. I yield.

Mr. YOUNG. Mr. Molinari.

Mr. MOLINARI. Thank you, Mr. Chairman. I would like to, I think, we have been talking somewhat in the abstract. I would like to try to reduce this to actual case analysis to see what happens, what role EPA plays. Last weekend I went home to my district and started to peruse the newspaper for the week and I saw numerous stories about a school where asbestos was found and where panic set in.

Everybody was concerned whether their children would have a serious problem, whether they should attend the school, whether plans to clean it up are proper. What happens when somebody calls EPA and says, hey, we may have a problem? We need your help. What do you do?

Ms. WILLIAMS. Presumably they call the regional office and tell us they would like our help in terms of determining what might be a proper course of action. We have, as I say, people in those regional offices that are available to provide information either on the telephone, if that works, or that can go out to the particular site.

We also have toll free telephone lines if the questions have to do with things like how can I get samples analyzed to tell me whether or not there is or isn't asbestos in a situation. So hopefully, we have set up the mechanisms that they have a place to call.

Mr. MESSNER. Mr. Molinari, if I could add just one comment from the in-house work we have done on our own facilities, when we found through a preliminary survey that some 44 of our facilities had asbestos and we wanted to assess the actual condition of the asbestos, so we could make intelligent decisions about our own employees, much like a school system for the children. We put together teams of people, drawing on our own Agency's competence, including these regional asbestos coordinators, and looked at all of our situations.

And that was extremely helpful. I was very impressed by the ability that our regional technical people had in combination with our own occupational health and safety people to make on the spot, sensible and reasonable judgments about the condition.

Mr. MOLINARI. OK. Then tell me, if you will, how many people do you have out in the region that are qualified as experts in making these determinations.

Ms. WILLIAMS. I can give you a rough number. It is on the order of 40 to 50.

Mr. MOLINARI. Forty to fifty.

Mr. MESSNER. Ten regions, so we average about four a region.

Mr. MOLINARI. Is that enough, do you think, based on the number of problems coming in?

Ms. WILLIAMS. Well, at this point we are not turning—I mean, I have to answer it by saying we are not turning anybody away. To the degree it is not enough, we will continue to supplement.

Mr. MOLINARI. What type of training is required for them to quality to be put into that position?

Ms. WILLIAMS. There is considerable in-house training. A lot of it is almost an apprenticeship kind of training, by going out with the people that already know and taking a look at the sites' different kinds of situations and learning. They are given special courses in terms of what to look for and so on.

Mr. MOLINARI. Are there any academic requirements?

Ms. WILLIAMS. No; many of them are engineers, but that is not a requirement.

Mr. MOLINARI. Getting back to a real life situation, school has a problem. Panic has set in. Patients are uncertain as to what to do. And they call the congressional office. Apparently this is a problem throughout the country. We, in turn, would call region II, where I am, and say, we need your help. We want to have you come down

and make an assessment as to whether there is a serious problem here or not. What happens in that case?

Ms. WILLIAMS. My hope is that if that was the request that they would go down and we would give an assessment as to the kinds of options that might be most appropriate in that case. Whether you are talking about a very serious situation where removal should be necessary or whether there are various abatement procedures short of removal that would minimize any kind of risk concern.

Mr. MOLINARI. Now, I assume they are working under the aegis of someone in Washington who occupies a high level of expertise so that there is adequate monitoring, that the people in the field are doing the proper work?

Ms. WILLIAMS. We have a very close relationship between not only the people in headquarters and the region, but also each of our regional offices. We meet numerous times as a group to exchange the information learned back and forth. It is, frankly, more a matter of headquarters providing additional technical help to our regional people. These people are quite qualified to make the kinds of decisions at that level in the region.

Mr. MOLINARI. OK. So by winding up I am going to say do I understand you correctly to say there is adequate personnel within EPA so that if any of us has a problem with our constituents or school in our district we can call and get quick response to make a determination whether there is a problem or not?

Ms. WILLIAMS. I certainly hope that is true. I believe it is.

Mr. MOLINARI. I will be calling you tomorrow morning. Thank you.

I have no further questions, Mr. Chairman.

Mr. YOUNG. Thank you, Mr. Molinari.

Dr. Rowland, do you have any questions?

Mr. ROWLAND. No.

Mr. Andrews.

Mr. ANDREWS. Thank you, Mr. Chairman.

I would like to very briefly go back to this consistency of standards which I am still troubled by. I represent a district in the Houston area. Within my district are several smaller cities, each of which has their own school board, their own city council and constituencies. Are you satisfied with the procedure, the track that you are on now? This information that you are trying to get out from multiple sources is satisfactory toward getting to an end result of some consistent standards? From what you say to me today, I really question whether each of those school boards is going to recognize the same kind of consistent standards based on political considerations in each community, based on the budgets.

Deer Park Independent School District is well funded, while a school district next door may have a very difficult time meeting some—any kind of standards let alone ones that are consistent around the country. I assume you all think we are headed in the right direction. Would any other members of the panel care to disagree with that conclusion? Do any of the other members of the panel feel maybe the procedure we are on is not enough? That we need more consistent standards of performance around the country within a State, within a city area, in order to ensure these schools meet the appropriate minimum standards for health and safety? I

don't know what each of you do. But if anybody is courageous enough to want to raise their hand——

Mr. YOUNG. If the gentleman would yield. We were going to go on down the panel, but I think it is a good point, Mr. Andrews. It looks like somebody put their hand up.

Mr. Welch, do you want to try that?

Mr. WELCH. I will address that question full bore in my testimony, Mr. Andrews. I hope you will bear with me.

Mr. ANDREWS. I will look forward to that. Maybe if some of the rest of you want to comment, I would appreciate that. That bothers me greatly. Let me turn in my remaining time——

Ms. WILLIAMS. Could I make one quick answer to your question, because I think there is one important fact that perhaps I hadn't brought out? While I think there is some very small fraction of cases where the only option is removal, I think it is important we identify consistently that set. And that is what we are going to be trying to do in our expansion of the current guidance that is out there. There is a whole other set where I am not sure there is one option that is the only right option. There may be an option to go ahead and remove this year and there may be an option that is equally safe that says we are going to encapsulate it this year and watch it carefully. And I think some of those decisions, it is OK to be inconsistent as long as public health is protected in the process.

Mr. ANDREWS. Well, I keep relating this whole problem to a similar situation with toxic waste sites, and this broad philosophical view that local folks are better able to deal with those kinds of problems rather than some kind of significant Federal standards and overview situation. I am not convinced that your solutions are adequate. I am not saying they are not having successful results and that you are not moving ahead, but in terms of us as a panel, as a committee and as a congress trying to set public policy in how to deal with this problem, I am not satisfied at all that the testimony we have heard this morning before the committee is going to be adequate.

Let me move to one other point. I am not trying to cut anyone off because I do want to hear your thoughts about it. But that has to do with what Mr. Shaw was questioning the panel about. And that is the certification procedures and techniques of people that clean up this asbestos. Who is responsible for that, and where should that responsibility lie?

I am concerned that there are some of these companies at least in my part of Texas that are having a field day cleaning up asbestos laden buildings that may not be properly certified or adequately trained at what they are doing. Companies that send employees into these areas, told to clean it up, may not be adequately protected. What is the standard we should set there, and who should be setting that standard?

I guess, Mr. Messner, I will direct that question to you. But I certainly would like to hear from anyone else on the panel.

Mr. MESSNER. I would just repeat that we try to provide the technical advice to the place closest to the problem which has the authority and responsibility to solve that problem. In the case of asbestos where there are a variety of solutions to the problem, we are trying to get good technical guidance out and put it in the hands of

local decisionmakers. It seems to us, from day-to-day experience in the last 3 years under very emotional circumstances, that it is working. And I know the Congress is debating and the President considering how much resource should be put at the local communities' disposal to do that in a financial way.

But having had fire fight after fire fight on this issue, I think we feel that the kinds of support and information we provide are what is needed, and pretty good decisions are being made in local communities. That is my impression.

Mr. SHAW. Would the gentleman yield to me on that point?

Mr. ANDREWS. Surely.

Mr. SHAW. I hear what you are saying and I agree with it. We don't want to get into a position of requiring a Federal license for physicians or lawyers or CPA's, or anything else. This is a State and local government function. And I see you view your responsibility as, one, getting the information out as best you can for the local decisionmakers. But I am not sure that the local decisionmakers have really identified or accepted their responsibility. We seem to be seeing more and more, and I guess this started with toxic waste and now it is coming over into this area, that everyone is looking to EPA to fulfill these functions that EPA really isn't equipped to do or wasn't set up to do.

I think everyone is saying, geez, I thought EPA was doing this. This I think makes it so important. If I were to be critical of EPA in any area here, it would have to be one of not getting the information out as it should be.

I have a question of what has local government been doing to, say, require a special permit for removal of asbestos? Have cities gone forward in that particular area, or do we know?

Ms. WILLIAMS. It is case by case. I am aware of some that have but——

Mr. SHAW. I think every city should. I plan to go to my office and write every city in Broward County and see that they look at this and then write a permit so they can have oversight as to who is taking it down, are the workers protected and are they using proper techniques and is disposal proper. This seems to be the easiest way to get it out quickly. I don't think once EPA gets into the communications aspect that anyone is going to be critical. But I think at this point, I think EPA in going forward and trying to work with an abundance of caution, the abundance of caution might be translated and might, in fact, be some foot-dragging in some areas where we really should be going ahead and moving out and communicating as much as we can and as rapidly as we can.

One nice thing about regulations is that you can change them every day. They are not like laws, drawn in stone. Go ahead and put these things down as best you can now and go back and change them as best you can because there are people out there dying from this stuff and there are also a lot of unscrupulous contractors who are making, as the gentleman from Texas says, having a field day and really don't know what they are doing, and a lot of them probably don't care. I am not only worrying about people getting ripped off, but I am worried about the workers involved and perhaps being contaminated in a very real way that will show up 20 years down the line.

We could be creating a problem here by just not getting the word out. You are right. It is a function of local government, but we have got to tell them awfully strong that it is their responsibility, not EPA's. EPA is only here to give out the information we can, and you boys are going to have to carry this ball and get started with it.

I thank the gentleman.

Mr. ANDREWS. Surely.

Do you think there are communities out across the country dragging their feet waiting for Federal standards to come down?

Mr. MESSNER. Mr. Andrews—I would comment to Mr. Shaw on this, too—there are a variety of environmental threats to the public health that the EPA is responsible for responding to. And we use a wide range of ways to get at it. In the case of the hazardous waste site, Superfund Program, we have immediate removal authority where there is a clear and present danger to public health, and it is a very visible and direct program.

In this particular case I think I would like to provide some of the press coverage in local areas where EPA has highlighted a reluctance, for example, on the part of a local school to take action where a problem is present. Spotlighting on problems like that is a legitimate way for the Federal Government to act as a catalyst for local people to carry out their responsibility.

Again I say there is an argument whether the Federal Government should pay for some of the removal as an expeditious way to solve the problem. Up to now we have been pretty effective in spotlighting these intransigent areas, and I would be glad to provide examples of that.

[The following were received from Mr. Messner:]

THE FIRE IN NEW JERSEY'S SCHOOLS

Parents throughout New Jersey are sending their children back to school this week with apprehension. Governor Kean's administration has mishandled the task of seeing that schools are demonstrably rid of asbestos and its pernicious threat to children's health. But though there's blame enough to go around in Trenton, the crisis was created in Washington.

Some three million American children are exposed in their schools to possibly dangerous amounts of asbestos, but the Federal Department of Education has almost completely ignored a 1980 law requiring it to help pay for detection and removal. When it discovered the cost—$1.4 billion, or about $100,000 a school—the Administration decided that the price of preventing children getting cancer while being educated was too high.

Washington delegated the asbestos problem to local school boards, without offering either funds or clear guidance. In 1982 the Environmental Protection Agency required schools to inspect themselves and post notices if crumbling asbestos was found. The strategy for ridding schools of asbestos seemed to be to create enough alarm among parents that local authorities would be forced into action.

Many school districts in New Jersey rushed to remove asbestos this summer. But the state government was unprepared for the scale of effort and the supervision that would be required. Governor Kean charged a committee with developing a state policy in February, but none has yet emerged.

The state's Department of Educaton has too few inspectors; it can't keep track of which schools have been inspected and which haven't. The Division of Building and Construction, charged with training and certifying asbestos removers, seems to have handed out certificates like leaflets.

An investigation by the State Public Advocate found that in the summer rush both schools and contractors had cut corners on proper removal and that the inspection program was "at best haphazard and disorganized."

The amount of asbestos in most schools probably doesn't approach the levels permitted in the workplace. But no amount is so small that it can be assumed safe. Washington's strategy was to have someone cry "Fire!" and Trenton has proved a poor fireman. Neither has much to be proud of.

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COURT REJECTS OSHA STANDARD—EPA FINES N.H. SCHOOLS FOR ASBESTOS VIOLATION

(By Cass Peterson, Washington Post staff writer)

The Environmental Protection Agency, in a strategic show of force against the nation's school systems, has fined a New Hampshire school district $24,000 for allegedly failing to report asbestos in its buildings.

The EPA, essentially conceding that its two-year experiment in voluntary cleanups has failed, accused the Goffstown, N.H., district of falsely certifying last June that its 10 buildings were free of friable, or flaking, asbestos.

According to EPA officials in Boston, a subsequent inspection found flaking asbestos insulation around pipes in a high school and two elementary schools.

Meanwhile, the government lost ground on another front in the battle against the fibrous mineral, which has been firmly linked to lung cancer and other ailments in humans. A federal district court in New Orleans last week threw out an Occupational Safety and Health Administration emergency standard that was intended to reduce worker exposure to asbestos immediately.

The ruling is likely to force additional delays in OSHA's effort to come up with a tougher permanent standard.

The New Hampshire penalty marks the first time the EPA has used its enforcement powers under a 1982 rule that required school districts to inspect their buildings and report any asbestos to parents and school employees. The EPA didn't make removal of the asbestos mandatory, assuming that pressure from teachers and parents would be sufficient to force action.

To the EPA's chagrin, the voluntary approach has proved to be a dud. Recent agency surveys have found that two-thirds of the school districts either did not conduct inspections or did not report or keep records on the asbestos they found.

As a result, EPA Administrator William D. Ruckelshaus is considering tougher, mandatory rules to control asbestos in schools and other public buildings.

The target of the agency's first penalty, meanwhile, indignantly contended yesterday that it was unfairly singled out for punishment.

"This matter could have been taken care of by a phone call," said Goffstown Superintendent Antonio Paradis, who noted that the district already had spent $54,000 to remove asbestos insulation from a classroom ceiling. "We understand they just intended to make an example of us."

Regional EPA administrator Michael Deland acknowledged that the intent was "to put all other school systems in New England on notice."

"We've issued numerous notices of noncompliance. Now we're looking at those school districts to see which have not taken steps to comply," he said. "We would hope that the action at Goffstown would speed up compliance by the others."

Paradis, who said the district would appeal, insisted that officials were not required to tell parents about asbestos in the Goffstown schools because the substance is "intact" and therefore not dangerous.

He said, "We have conflicting information as to what is friable, what is not friable, what is dangerous and what is not."

Deland said the district's interpretation of the rules "is incorrect." But he acknowledged that the EPA has no power to force Goffstown to remove or seal its asbestos, even if the fine sticks.

"We would hope that responsible parents and educators would recognize that this is a health hazard and would take steps," he said.

A slightly disgruntled Paradis said yesterday, "I would think that a local agency and a federal one could settle this face to face. Now we have all these parents calling."

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[From EPA Environmental News, Mar. 12, 1984]

EPA ASSESSES FIRST PENALTY UNDER SCHOOL ASBESTOS RULE

In the first, administrative civil complaint ever issued under the U.S. Environmental Protection Agency's school asbestos rule, EPA is assessing a $24,000 penalty

against New Hampshire Administrative Unit No. 19 for violations at three of the schools under its jurisdiction.

The Unit operates ten schools in the towns of Weare, Goffstown, Bow, Dunbarton, and New Boston.

The complaint, issued today under authority of the Congressional Toxic Substances Control Act, alleges that Unit No. 19 has failed to meet the requirements of EPA's asbestos rule for three of its schools. All three schools are in Goffstown; Goffstown High School, Bartlett Elementary School and Upper Goffstown Elementary School.

"This action shows that EPA will not hesitate to fine school officials anywhere in this country who are negligent in telling parents about any asbestos danger faced by their children," said EPA Deputy Administrator Alvin Alm.

Scientific evidence points to asbestos as a cause of lung cancer and of mesothelioma, a cancer of the membranes that line the chest and abdomen.

Under EPA's school asbestos rules, issued May 27, 1982, all public and private elementary and secondary school administrators were required, by June 28, 1983, to have inspected their buildings, sampled and analyzed any friable materials for asbestos, notified employees and parents of any asbestos detected, and maintained records certifying compliance with the regulation. (Friable materials are those that when dry may be crumbled, pulverized, or reduced to powder by hand pressure.)

"On-site EPA inspections of the three schools as recently as Nov. 30, 1983 showed them all having friable asbestos-containing materials; yet Unit No. 19 never performed proper inspections on the three schools, or any sampling, analysis or public notification as required by the law," Alm added.

A brief chronology of events leading to this penalty:

May 23, 1983: The New Hampshire Dept. of Health Services reports to Unit 19 that samples taken at Upper Goffstown Elementary School reveal 80 percent asbestos (by volume) in a boiler room pipe and 60 percent asbestos in a boiler room stack.

Aug. 29, 1983: A U.S. EPA employee, acting under authority granted him by the Toxic Substances Control Act, inspects Goffstown High School and Maple Avenue Elementary (also in Goffstown, N.H.), and provides written notice of the inspection to William Johnstone, Unit 19 Business Administrator. The EPA inspector finds friable material at both schools. That same day, however, Johnstone certifies in writing that Unit 19 inspected Goffstown High School, Bartlett Elementary School, Upper Goffstown Elementary School, and Maple Avenue Elementary School on June 6, 1983, and found no friable material.

Oct. 28, 1983: EPA issues notice of non-compliance to Unit 19 for failing to find friable materials during its inspections, requesting Unit 19, within 30 days, either to correct violations or submit a time schedule for correcting violations.

Nov. 7, 1983: Superintendent of Schools for Unit 19 requests EPA by letter to rescind notification, because (according to Superintendent) Unit 19 does not own the school buildings, and asbestos in school buildings is not friable.

Nov. 30, 1983: After written notice of inspection to Johnstone, EPA employee inspects Goffstown High School, Bartlett Elementary School and Upper Goffstown Elementary School and finds them to contain friable material. This material, when analyzed, shows that all three schools contain asbestos.

EPA has determined that as of Nov. 30, 1983, Unit 19 had not properly inspected Goffstown High School, Bartlett Elementary School, and Upper Goffstown Elementary School, and had not done the sampling, sample analysis, public notification and record-keeping for these schools required under EPA's 1982 school asbestos rules. At this time, EPA determined that Maple Avenue School had met the requirements of the 1982 rules.

"Based on the facts cited above, and on the extent and gravity of the violations, EPA has proposed to assess a civil penalty against Unit 19, as authorized by Section 16(a) of the Toxic Substances Control Act," Alm said.

Under TSCA, Unit 19 has 20 days from the receipt date of the EPA penalty notice to request a hearing on the issues.

Elsewhere nationally, EPA is taking other actions over and above its May 1982 federal rules to reduce school asbestos threats.

Since 1979 EPA has operated a Technical Assistance Program which includes the following:

All 10 EPA regional offices have Regional Asbestos Coordinators, assisted by technical advisors hired under an American Association of Retired Persons grant. This team responds to public questions, distributes guidance documents, conducts training seminars, and gives guidance on different alternatives in reducing asbestos exposure.

A quality assurance program in which 175 laboratories participate. The program includes a toll-free number where callers can get guidance on analyzing asbestos samples (800-334-8571, Ext. 6741).

A toll-free number where the general public can direct requests for technical assistance (800-424-9065).

A guidance document which summarizes information on the identification and abatement of asbestos-containing materials. This document outlines a systematic process for building owners to follow in selecting a course of action ("Guidance for Controlling Friable Asbestos-Containing Materials in Buildings," March 1983, EPA Report No. 560/5-83-002).

In addition to the technical assistance program, EPA has also taken the following action:

Last fall, EPA began a representative sample survey of local education agencies to determine the effectiveness of the federal school asbestos rule.

A comprehensive two-year compliance monitoring program has been underway since June 1983, targeting approximately 2400 school districts for inspections. In some cases, EPA will work directly with states to monitor for compliance with the federal rule.

EPA recently got authorization to hire 16 new full-time employees in its Regional offices in order to beef up the technical assistance and compliance monitoring programs for asbestos.

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[From EPA Environmental News, Aug. 10, 1983]

## EPA Cites Five School Systems Under Asbestos Inspection and Notification Rule

The U.S. Environmental Protection Agency announced that it has cited five New England school systems for failure to comply with federal regulations requiring inspection and public notification concerning the presence of "friable" asbestos in school buildings.

Notices of noncompliance were mailed to the Boston Public Schools, the Boston Archdiocesan Schools, the Providence, RI Public Schools, the Archdiocese of Hartford, CT Schools, and the Newburyport, MA Public Schools.

"School systems throughout New England have been working hard to comply with the federal inspection and notification requirement but many have not met the June deadline. Our action should not be interpreted as indicating the presence of a public health problem in any school or school system. We are taking this action to try to ensure that school administrators continue to make the inspection and notification effort a high priority in order to avoid problems in the future," said EPA Regional Administrator Michael R. Deland.

Deland said that although each of the cited school systems had initiated efforts to comply with the federal asbestos inspection and notification regulations, they had not met the June 28, 1983 deadline for posting of notices and for notification of parents and employees as of the time of EPA's inspections of the systems.

"We have inspected six school systems since the June 28 inspection and notification deadline. Of the six, only Manchester, NH Public Schools were in full compliance with applicable regulations," Mr. Deland exlained.

"EPA chose the six school systems for inspection on the basis of student population and previous indications that they may not have been in compliance. Additional EPA inspectors have been assigned to check other New England school systems, public and private, during the coming months," Mr. Deland added.

The EPA rule on "Friable Asbestos-Containing Materials; Identification and Notification" adopted in June of 1982, gave school administrators twelve months to inspect buildings for the presence of friable asbestos-containing materials. Friable materials are those which, when dry, may be crumbled, pulverized, or reduced to a powder by hand pressure thus releasing fibers to the air. Asbestos fibers are harmful when breathed or swallowed. Exposure may cause asbestosis, a lung ailment, and cancer of the lung and gastro-intestinal tract.

The federal rule further requires that warning notices be posted in each school that contains friable asbestos, that a written notice be sent to school employees and Parent-Teacher Associations or individual parents, and that inspection records be maintained for public access in each school and in the administrative office of each school system.

Four years ago EPA established a national voluntary program offering technical assistance and guidance that would enable school officials to detect and correct po-

tentially hazardous asbestos conditions. When the voluntary system did not appear to be working, EPA wrote and published the rule which became effective in June 1982, and required compliance by June 1983.

In cooperation with the six New England states, EPA offered 18 seminars on compliance. School personnel were instructed on safe maintenance of asbestos-containing materials which can be sealed, taped or otherwise treated to prevent the release of fibers. If this is not possible, EPA advises the removal of the asbestos-containing material using precautions contained in EPA guidance.

"While it is true that the school systems being cited today have made substantial progress, we feel it is essential that the notification process be carried out. These school systems, along with others who may not be in compliance, have an obligation to notify their employees and the parents of their students when friable asbestos has been discovered," Mr. Deland continued.

He pointed out that EPA rule does not require the removal of the asbestos containing materials.

"However, we do feel that school administrators should discuss the asbestos problem with parents, custodians, teachers and qualified professionals and then decide if corrective action is warranted. The notification process is intended to bring about such discussions," Mr. Deland stated. The notices require the school systems to comply with the requirements of the rule in thirty days or to propose a schedule for compliance.

Mr. Deland pointed out that additional inspections will be made in other cities and towns and violation notices will be issued if schools are not in compliance. "We think this is an important public health issue that should be dealt with in a fair and open manner. Those who work in, or attend, schools where there is a potential asbestos problem should be apprised of that fact," Mr. Deland concluded.

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[From EPA Environmental News, Nov. 1, 1983]

BOSTON.—The U.S. Environmental Protection Agency today announced that it has notified ten New England school systems that they must comply with federal asbestos regulations requiring inspection and public notification.

Notices of noncompliance were sent to the following school systems: Hartford, CT public schools; Ipswich, Bolton/Stow, and Worcester, MA public schools; the Diocese of Manchester and School Administrative Union #19, Goffstown, NH; Woonsocket public schools and the Diocese of Providence, RI; and Rutland and White River Junction, VT public schools.

EPA Regional Administrator Michael R. Deland noted, "We are taking this action to ensure that school administrators continue to make the inspection and notification effort a high priority in order to avoid problems in the future. However, our action should not be interpreted as indicating presence of a public health problem in any school or school system."

The compliance problems were found as a result of recent EPA inspections. Of the 23 school systems inspected, 13 were in compliance with the rule.

The following school systems were determined to be in compliance with EPA requirements: the Diocese of Bridgeport, CT; the Saco, and Kittery, ME public school districts; public schools in Littleton, Middleton, Nahant, Abington, Wakefield, Hudson, and the Narrangansett and Central Berkshire regional school districts, MA; the School Administrative Union #18, Franklin, NH; and, the Rutland, VT Seventh Day Adventist School.

The EPA rule on asbestos-containing material was adopted in June 1982. It gave school administrators twelve months to inspect buildings for the presence of friable asbestos. Friable materials, when dry, may crumble or be reduced to power by hand pressure. When this happens asbestos fibers can be released to the air. They are harmful when inhaled, can cause asbestosis, a lung ailment, or cancer of the lung and gastro-intestinal tract.

The federal rule also requires that warning notices be posted in schools that contain friable asbestos, that a written notice be sent to school employees and parent-teacher associations or individual parents, and that inspection records be maintained for the public in each school and in the administrative office of each school system.

Four years ago EPA established a national voluntary program offering technical assistance and guidance to help school officials detect and correct potentially hazardous asbestos conditions. When the voluntary system did not appear to be working, EPA wrote and published the rule which required compliance by June 1983.

To assist school systems in complying with the rule, EPA has offered seminars on compliance procedures. School personnel were instructed on the safe maintenance of

asbestos-containing materials which can be sealed, taped or otherwise treated to prevent the release of fibers. If these safety measures are not possible, the Agency recommends the removal of the material, using precautions contained in EPA's guidance document.

While the EPA rule does not require the removal of asbestos-containing materials, school administrators are encouraged to discuss the problem with parents, custodians, teachers, and qualified professionals to determine if corrective action is warranted.

Mr. Deland said the New England regional office of EPA is conducting an average of ten inspections per week and that violation notices will be issued to school systems not in compliance with the rule.

"We think this is an important public health issue that should be dealt with in a fair and open manner. Those who attend or work in schools where there is a potential problem should be made aware of the situation," Mr. Deland said.

He added, "While it is true that some of the school systems being cited today have made substantial progress, we feel it is essential that the notification process be carried out. These school systems, along with others which may not be in compliance, have an obligation to notify their employees and the parents of their students when friable asbestos is discovered."

The notices of noncompliance require the school systems to comply with the requirements of the rule in 30 days or propose a precise schedule for achieving compliance. Failure to respond could result in the issuance of a civil complaint.

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CHEYENNE, WYO. (UPI).—The Environmental Protection Agency today announced it intends to levy a $30,000 fine against Laramie County School District No. 1 for failing to notify parents of the presence of asbestos in five Cheyenne schools.

The EPA said it had notified the district in November 1983 that it was not in compliance with federal asbestos safety standards, but the district, in a March 6 letter, responded to only "a portion of the violation."

The EPA said the district response lacked assurances that the Parent-Teachers Association or the students' parents themselves had been or would be notified of the results of tests conducted in September 1983 which found asbestos present in Buffalo Ridge, Corlett and East Ridge elementary schools; Casey Junior High and East High.

The EPA said parental notification is "a keystone of the national effort aimed at protecting students and schoolworkers from dangerous asbestos fibers."

Asbestos, once commonly used as fire-resistant insulation in many buildings, has been linked to cancer and non-malignant respiratory diseases, the EPA said.

EPA regional toxic chief Bill Geise said the Laramie County district was responsive in identifying asbestos materials in the schools and in conducting an active abatement program to remove the problem asbestos from the schools.

"We are pleased about that, but it is imperative that parents be advised of the problem in their schools so they can be aware of the risks and help forge local solutions," Geise said.

Geise said the federal Toxic Substance Control Act provides for penalties of up to $25,000 per day for each violation of the act, but Geise said the proposed $30,000 penalty was arrived at by applying a formula set by the EPA which suggest penalties of between $1,300 and $13,000 per school, depending on the severity of the viotion and action taken by districts in response to problems.

EPA has the discretion to reduce the penalty if remedies are made in a timely way and extra efforts are made to remove asbestos hazards, Geise said.

Geise said the "mid-range" penalty of $30,000, or $6,000 per school, was suggested because the Laramie County district has been cooperative—"at least in part."

The district now has 20 days to contest the EPA complaint and the amount of the penalty.

School district officials could not be reached for comment today.

The civil penalty is the first such asbestos action taken in the EPA's six-state Region 8, which includes Wyoming, Colorado, Montana, North Dakota, South Dakota and Utah.

## EPA Cites Arlington For Failure To Post Asbestos Warnings

(By Anndee Hochman, Washington Post staff writer)

Arlington County failed to post warning notices of potentially hazardous asbestos in two schools, according to the Environmental Protection Agency, which recommended yesterday that the school system be fined $14,600.

The proposed fine "should send a clear and unequivocal message to all school officials that we will not tolerate continuing violations of EPA's asbestos rules," said John A. Moore, the agency's assistant administrator for pesticides and toxic substances. Since March, the EPA has proposed civil penalties against 43 other schools systems around the country, he said.

The EPA, citing the discovery of crumbling asbestos at Wakefield High and Jamestown Elementary schools, said it was directing Arlington to certify that the county's 36 schools were in compliance with the regulations.

An Arlington official said yesterday the county's inaction was the result of "communication or interpretation" problems over the EPA rules. "We were not aware [the two schools] were supposed to be posted," said the schools' director of operations and facilities, Thomas Weber.

School officials said they received a written complaint from the EPA Tuesday citing failure to post notices in Wakefield High, and Jamestown Elementary schools and keep proper files on the presence of asbestos at Jefferson Intermediate School, violations of the federal Toxic Substances Control Act.

EPA representatives conducted inspections of three Arlington schools and the administration building last month and saw crumbling material that later was determined to be asbestos at Wakefield and Jamestown, according to regional EPA asbestos coordinator Pauline Levin.

Under the Toxic Substances Control Act, school officials were required to inform employes and parents of the presence of crumbling asbestos in schools by June 1983. Crumbling, or friable, asbestos can release tiny cancer-causing fibers that may endanger people who inhale them.

Arlington and the EPA seem to have different notions of when asbestos poses such a hazard.

Weber said this discrepancy is the reason no notices were posted by the June 1983 deadline. "I did not define friable [easily crumbled] in the way [the EPA] defined friable," he said. He said he did not consider asbestos friable unless it was something an individual could reach.

The EPA defines friable materials as those that when dry "may be crumbled, pulverized or reduced to powder by hand pressure."

Asbestos contained on a gymnasium ceiling or in an air duct that enters a smokestack, two of the sites noted on the EPA inspection, fit the EPA's—but not Weber's—definition he said.

Arlington posted asbestos notices in 24 buildings Aug. 13, three days after the EPA visit, indicating the presence of asbestos. Arlington officials have said that all asbestos in the schools is encapsulated and does not pose health hazards to students or employees.

The encapsulated asbestos, in most cases, has been swathed in a cloth cover and several costs of paint, Weber said. "If someone were to hit it hard enough, some fibers could be released," he said.

Regional coordinator Levin said yesterday it was "unlikely" that Arlington will have to pay all of the $14,600 fine. If the schools have spent money on corrective actions since the EPA's visit, those expenditures could be deducted from the total, she said.

Weber said the schools have spent at least $14,600 on asbestos removal since the EPA inspection. Removing all asbestos from county schools would probably cost between $2 million and $2.5 million, he said.

School officials plan to meet with EPA administrators in Philadelphia Tuesday to negotiate the fine.

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[From the New York Times, Aug. 4, 1984]

## U.S. Fines School Board on Asbestos

The Environmental Protection Agency yesterday fined the New York City Board of Education $237,900 for failing to comply with Federal regulations on the use of asbestos in schools. The city has denied the charge.

The E.P.A. said it had found violations in a school district office and in 88 schools. The violations included incomplete notification to parents and employees about the presence of asbestos in the schools and failure to maintain required records.

The fine was part of an administrative complaint issued against the Board of Education for not being in compliance with the Federal regulations.

Asbestos, which was once commonly used in construction as a fire-retarding or insulating material, has been found to cause cancer.

EXAMPLE OF PETTYFOGGERING

Steven Schwager, the chief school business executive for the Board of Education, called the E.P.A. action "the most outrageous example of publicity-seeking pettyfoggering I've ever heard of." He said that New York City was "probably the leader in the country in asbestos removal" and had spent $15 million since 1978 in its asbestos program.

"This action is just like the scene in the movie 'Ghostbusters,' where the E.P.A. inspector reads the letter of the law without reading the intent of the law or the spirit of the law and it results in a major catastrophe for New York City," Mr. Schwager said.

He said that the E.P.A. was incorrect in saying that notification had not been given to employees and parents of children who attend the schools cited by the E.P.A. He said the board has certifications from principals in those schools that they had posted the required notices and signed statements from custodians that employees had been properly notified.

Mr. Schwager said that all of the asbestos in ceilings and walls in all student-occupied areas in the system's 980 schools had been either removed or contained. He said that asbestos remained in nonstudent areas in 623 schools, mainly in boiler rooms.

"We have a plan to remove all of that asbestos," he said, "and it will probably cost another $15 million to $20 million and take six years or so to complete—not because we don't want to do it, but because there are only a limited number of contractors out there who can remove asbestos."

Mr. Schwager said that the board had conducted its own spot check of 400 of the 623 schools and found 280 of the schools in full compliance with the Federal rules. He said the others had minor errors, which principals corrected on the spot.

James Marshall, chief of staff of the E.P.A.'s New York office, which issued the administrative complaint, said that if the Board of Education could show it was in compliance with the law, the agency would reconsider its action.

"Obviously, we regret that they have chosen to react this way," Mr. Marshall said. "At the request of the board, we have given them several extensions and we feel that they are still not in full compliance."

Mr. ANDREWS. I think that is an excellent point. My question really is, though, Houston, for instance, do you think there are some cities, large metropolitan areas, that may be slow in moving in this area in anticipation of some Federal guidelines? Do you think—is that going on around the country?

Mr. MESSNER. I am sorry. I don't have a specific answer for you. I know that there are expectations being created in local communities. I would ascribe them more to the possibility of resource funding answers to their problems, rather than technical assistance that they seem to want.

Mr. ANDREWS. Would anyone else on the panel care to comment on that? No takers.

Thank you, Mr. Chairman.

Mr. YOUNG. Thank you, Mr. Andrews.

I think we will get to that very shortly. It seems like we have got to start paying more attention, in my judgment. I will take the recommendation of Mr. Shaw and Mr. Andrews that we send a letter to every municipality and school district in the Metropolitan St. Louis area. So I appreciate Mr. Shaw's comment, and that of the gentleman from Texas, Mr. Andrews, on this particular point.

I have Times Beach, MO, in my district. Our State highway department came in and moved the dirt out of "Dioxinville," Times Beach, a relatively short time ago, and used that dirt to backfill for some new highway. I find that almost impossible to believe with the problems we have had with Times Beach. I have suggested nobody do anything in that area but stay out of there.

EPA stopped the blown-in insulation just a short time ago in the homes. Isn't that right, Ms. Williams?

Ms. WILLIAMS. No; that was CPSC that dealt with——

Mr. MESSNER. The Consumer Product Safety Commission was responsible for that action.

Mr. YOUNG. But action was taken, and I don't think that is happening anyplace in the country. It seems to me this is kind of what we ought to be looking at. Are there any guidelines, Mr. Messner, or Ms. Williams, for the disposal in this country of the asbestos that is removed?

Ms. WILLIAMS. I would like to provide the answer for the record. That gets into——

Mr. YOUNG. Where do people put this asbestos?

Ms. WILLIAMS. There are guidelines. But it is stuff, it is an area that is dealt with by our Air Office, our Superfund Office, and our RCRA Office. I would feel better having them address the question or providing it for the record.

Mr. YOUNG. Well, I am sure you will have time to find out that answer because we are going to get to Mr. Mitchell. I am going to ask him what guidelines they are using to dispose of the asbestos in the Federal Building in San Francisco that we inspected and where the employees are just scared to death. I would appreciate it if we could get that answer relatively soon. Are there guidelines from the Environmental Protection Agency on the disposal of asbestos that is being removed? Is it just going outside of the school, into the trash bins and then spread all over like the residues from agent orange?

Mr. MESSNER. We will seek the answer.

[The following was received from Mr. Messner:]

Requirements on disposal of asbestos are contained in the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR 61 parts A and B). Owners or operators asbestos demolition or renovation operations, (which include schools) are required to comply with the following:

Each owner or operator shall

(a) Deposit all asbestos-containing material at waste disposal sites.

(b) Discharge no visible emissions to outside air during the collection, processing (including incineration), packaging, transporting, or deposition of any asbestos-containing waste material.

(c) Treat asbestos-containing waste material with water.

(i) Mix asbestos waste from control devices with water to form a slurry; adequately wet other asbestos-containing waste material; and

(ii) Discharge no visible emissions to the outside air from collection, mixing and wetting operations.

(iii) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; and

(iv) Label the containers as follows:

CAUTION

CONTAINS ASBESTOS

AVOID OPENING OR BREAKING

Asbestos is hazardous to your health

Mr. YOUNG. Thank you very much.

I think because of this question, Mr. Welch, president of Safe Buildings Alliance, might be our next witness. Mr. Andrews and Mr. Shaw, without objection, I am just going to move to call on Mr. John Welch, president of Safe Buildings Alliance, then we will get back to Mr. Mitchell and the other Federal agencies.

Do you mind moving ahead, Mr. Welch? We are moving a little bit from the agenda but I think this might be timely.

Without objection, your testimony will be made part of the record and you can go ahead and summarize, then we will ask you some questions.

Mr. WELCH. Thank you very much, Mr. Chairman.

Mr. YOUNG. Would you tell us specifically what the Safe Buildings Alliance is?

Mr. WELCH. Yes. The alliance is a newly formed association of companies that previously manufactured asbestos containing materials for building construction. SBA was formed to help promote a reasonable response to the issue of asbestos in schools and other buildings—a response that will safely and effectively protect building occupants. Like others here today, I believe that the alliance shares the view that the Environmental Protection Agency's current program, simply stated, is inadequate. Recent press articles, and I could bring a veritable ream of them in here, underscore the seriousness of the current situation.

Buildings, in particular schools, have been closed by improper removals that have been performed by unqualified contractors who thumb their noses at the safety of their own workers and who ultimately increase risk to building occupants. Without qualification the alliance believes the paramount concern of this subcommittee's examination of the issue should be the safety of building occupants and workers in those buildings and the challenge for all of us—the challenge for the subcommittee, the challenge for the alliance, the challenge for EPA, NIOSH, OSHA, GSA—is really to sort out fact from emotion, to make sound decisions and to advise the public of these decisions because clearly the public is asking for decisions.

A number of governmental bodies, thankfully, and independent scientists have already started putting this process in motion. You will hear from the National Institute of Building Sciences later. I won't preempt their remarks. But, for example, the report of the Ontario Royal Commission on matters of health and safety arising from the use of asbestos is the most authoritative, up-to-date source of data on indoor asbestos. The report is based on 53 days of hearings, over 8,000 pages of testimony including that of many leading U.S. experts on asbestos health effects. The Commission found that Ontario's program to remove asbestos from schools and other buildings actually resulted in potential endangerment of building occu-

pants and needless expenditure of dollars. Only a fraction of the removal projects were warranted by the risks posed by asbestos.

Mr. YOUNG. Do you mind, Mr. Welch? I understand, Mr. Messner, you have to go. We appreciate your appearance before the subcommittee this morning, Mr. Messner. I understand Ms. Williams will stay with us.

Mr. MESSNER. Mr. Chairman, I have two or three of our technical staff who can stay and be available to answer any questions.

Mr. YOUNG. That would be great.

Mr. MESSNER. I very much appreciate having the chance to appear before you.

Mr. YOUNG. Thank you.

Mr. Welch.

Mr. WELCH. Mr. Chairman, the Safe Buildings Alliance believes that the serious problem regarding asbestos in buildings is not its presence in those buildings but the danger as we have heard today, as you all have suggested, that hasty and unnecessary removal actions are actually going to create hazards where none previously existed. In support of this belief I would call to your attention a recent report by the State public advocate on the status of removal projects in New Jersey. This report states loudly and clearly that improper removal of asbestos materials can be far more hazardous than if the materials are not removed at all.

The report cites example after example where poor asbestos removal, prompted by public and regulatory pressure, actually created greater risks. The New Jersey Public Advocate's report, which I would like to submit for the record, cites instances of workers not wearing proper respiratory protection during removal, of inadequate inspection during the removal projects, and of contractors' requiring workers to stay on the job as long as 20 hours straight.

The report also notes that many of the contracting companies hired to do the abatement work were unqualified, uncertified, and that workers routinely ignored procedures designed to insure safe removal and disposal of the asbestos material.

Similar conditions almost certainly exist throughout the country. The apparent cause for such flagrant mishandling of asbestos cleanups is the ongoing confusion and lack of information, the information void that exists among Federal, State, and local agencies in identifying where a problem may exist and what to do about it once a problem is determined.

We believe it is essential that the Environmental Protection Agency step in to provide these answers—to correct an increasingly alarming situation that it, EPA, in part, helped create. State and local officials desperately need guidance in determining those conditions that require abatement and those that do not. These officials have been waiting all too long for some sort of meaningful guidance from the Agency. We have heard EPA argue, as it has done before, that legislation or regulation at this point in the program's history will merely slow down the assessment and abatement process because building owners will wait for guidelines to be established before acting or that they will queue up, to use Mr. Messner's term, for the grant funding of the Asbestos School Hazards Abatement Act.

I think Mr. Andrews characterized it quite appropriately. That is a classic catch-22 situation. But I ask you is it better to have local school boards or teachers eyeball the situation, with each community developing its own standards on a case-by-case basis, because that is what is really happening out in the real world so to speak. Make no mistake. The issue here is public health policy. But the current EPA system is not working for anybody. It is not working for the building owners, it is not working for the workers, it is not working for building occupants or State and local officials.

The Safe Buildings Alliance joins with a wide spectrum of interests, including the teachers and employees unions, in their concern for the lack of EPA standards. We agree that EPA should move and should move quickly to establish national binding guidelines for assessing asbestos risk and standards for abatement if a risk is identified.

I would be happy to answer any questions the subcommittee members might have.

Mr. YOUNG. Thank you very much for your fine statement. It seems the points you have raised are very valid. I haven't had a chance to go over the Ontario Royal Commission findings.

Mr. Welch, to your knowledge, where is the material that is being taken out of buildings, schools or public, going? Do you know where it is going?

Mr. WELCH. I have no idea. The New Jersey public advocate reports actually tell some horror stories.

Mr. YOUNG. Pardon me?

Mr. WELCH. The New Jersey public advocate's report tells some horror stories of contractors who are taking the—hauling away the asbestos materials in their cars or flushing it down the toilets.

Mr. YOUNG. In their what?

Mr. WELCH. Their cars.

Mr. YOUNG. Automobiles?

Mr. WELCH. That is correct, sir. Others flushing it down the toilet.

Mr. YOUNG. Oh, that is good.

Mr. WELCH. I think the laws, to the best of my recollection, with regard to asbestos containing waste are handled on a State-by-State basis. That is, some States list asbestos and asbestos containing products as hazardous wastes and require they be disposed of in a class I landfill.

Mr. YOUNG. You say you believe some States have guidelines for the removal and disposal? Is that what you said? I didn't quite hear your last statement.

Mr. WELCH. Some States do have requirements for disposal of asbestos containing materials. Whether or not contractors are holding to those requirements I think is highly questionable. If I had to answer your question categorically, I would say probably not.

Mr. YOUNG. Because I know in Missouri our industrial inspection group under the Missouri department has maybe six employees. So unless it has changed since I left the Missouri Senate 8 years ago—the gentleman from Florida, Mr. Shaw?

Mr. SHAW. Mr. Welch, I think you have summarized your statement with regard to your view of the responsibility of EPA by saying that they had an obligation to come forward with national

binding guidelines with regard to asbestos. Is that a correct assessment of your view of what the responsibility of EPA is, or do you view their responsibility as going beyond that?

Mr. WELCH. I think clearly it goes beyond that. I didn't mean to suggest that that is——

Mr. SHAW. Would you then give us a point-by-point position as to exactly what do you think EPA's responsibility is? I haven't seen anybody articulate that yet.

Mr. WELCH. Yes. No. 1, EPA should establish, for lack of a better term, a meaningful scientific standard for assessing the risk of asbestos containing materials in buildings. That would be the standard that Mr. Andrews and everybody is looking for.

Now, in the enforcement of all the environmental statutes that the Agency has there is the so-called magic number, or some statutory framework in which that number can be developed. That doesn't exist under the existing asbestos school hazard abatement program.

No. 2——

Mr. SHAW. Statutory framework, does that mean a law coming from this Congress?

Mr. WELCH. No; it would probably come under existing—an existing statute under which the Agency might regulate, whether it is a Toxic Substances Control Act or a similar statute.

Mr. SHAW. Let me stop you there, if I may.

Mr. WELCH. Surely.

Mr. SHAW. I am sorry. I apologize because I wanted you to run through these point by point. What is the statute right now by which they would have the authority or obligation to go forward on that? The purpose of this hearing is to see whether additional statutes are necessary.

Mr. WELCH. I think not.

Mr. SHAW. As a responsibility of Congress I think it is necessary that if the EPA is not doing what they should do that this Congress know exactly what statute it is that they have the obligation to go forward under that they are not.

Mr. WELCH. Let me cite an example, the Toxic Substances Control Act. And I am not suggesting that that is the statute under which they should go forward. It might be. I am not an attorney. That certainly is a judgment that they could make. But there are threshold findings that must be made with regard to Toxic Substances Control Act: unreasonable risk, a significant risk. To the best of my knowledge, EPA has not made or articulated that threshold finding or so-called magic number in terms of telling schools when and how asbestos hazards, if they exist in those schools, should be handled. What they have created is a heightened perception about the problem, a suggestion that something should be done about it, but not technical guidance, no magic numbers, nothing that nontechnical people can relate to that will sort of turn on the traffic light and say go, or stop, or caution, whatever the case might be.

That concludes my point 1. My point 2 would be, I think this need which has been underlined by the New Jersey public advocate's report, the need to certify contractors, the possibility that these contractors in the first instance might be endangering their

own workers by not providing them respiratory protection is bad enough. But the fact that they might through improper removal create asbestos levels in buildings that might be hundreds or even thousands of times greater than they were before the material was removed I think is even more reason for the Agency to either set model standards or Federal preemptive standards, whatever the case might be.

Something needs to be done in the certification area. I think all parties agree on that—industry, labor. Everybody that I have heard and am familiar with with regards to the issue believe that—even asbestos abatement contractors favor that. Ask the National Association of Asbestos Abatement Contractors. They want certification because they are concerned about exactly what you have characterized, fly-by-night outfits.

Mr. SHAW. What we are talking about is State and local government certification in accordance with some type of a model certification that would be put out in the regulations by the EPA.

Mr. WELCH. That is correct.

Mr. SHAW. I understand that.

Mr. WELCH. Fine.

Mr. SHAW. Are you through with point 2?

Mr. WELCH. For right now I would be happy with those two, Mr. Shaw. And I think most of the other people involved with this issue would be——

Mr. SHAW. I think that is a reasonable position. But I am not sure that the people here from EPA in their testimony have disagreed with what you have said. And I don't think anybody up here disagrees with what you have said. I think the question is, One, are we on track from the standpoint of time? And I think that is the thing that we have to be concerned about, how fast are we moving ahead, when are we going to come up with these guidelines and how are we going to communicate them. Therein I think lies the problem.

I don't know of any precedent where you would get into a national certification, nor do I think we want one. But I do think we want to put the information out with a model type of statute to the State governments and give them, though I don't think they will need any, encouragement. We have always found ways through a particular funding of certain projects to States to encourage them to adopt certain guidelines. I am sure that that carrot approach can be helpful here.

But I am not sure I have heard any disagreement. I see the people from the EPA are still here. Mr. Messner has come back.

Mr. MESSNER. Yes.

Mr. SHAW. If I may, Mr. Chairman, take the liberty of throwing the ball back over there and seeing if there is any disagreement in EPA's role in the particular matter. I think Mr. Welch has set it out pretty clearly.

Mr. MESSNER. Well, Mr. Shaw, we would agree and have struggled very hard to give clear guidance. Sometimes it is not possible.

Mr. SHAW. Well, I think you have given a great deal. I think that book that I was in possession of a few minutes ago goes a long way toward doing exactly that.

Mr. MESSNER. Thank you. I think so. It is sort of frustrating for us. People reach for a single number or single stop-and-go light, as the gentleman suggested, that would make it very simple to make general statements. Unfortunately, in some of the areas of environmental danger and threat there are very sophisticated distinctions that have to be made so that one, we are assured of protecting the public health, and two, we don't waste resources, and three, we make certain we don't create some kind of regulatory scheme that would make it impossible to have local options and judgments.

Mr. SHAW. I don't think anybody has suggested that. I didn't see that come out of this hearing at all, that anybody was suggesting we adopt some rigid Federal standard under the umbrella of the Federal Government.

I have no further questions.

Thank you, Mr. Chairman.

Mr. YOUNG. The gentleman from Texas.

Mr. ANDREWS. I want to concur with what Mr. Shaw has just said. I gather from your testimony, especially yours, Ms. Williams, that you believe that the EPA is to track in what it is doing. And the real issue, as Mr. Shaw I think has so succinctly put it, is are we on the right track, and what is the time frame? That is really what this committee needs to be doing. Not to set some rigid, tight guideline that every school district in the country has to follow. Are we on the right track within the proper and appropriate time limits?

Ms. Williams, I assume from your testimony that you believe we are, and that this multiple source of information that you have testified to earlier today is adequate in alerting all the different school districts, as I mentioned, in my area a big sophisticated school district like Houston, relative to a very small city like Seabrook that has its own school district and its own levels of expertise. I assume from your testimony that you are satisfied with the progress that has been made. Is that correct?

Ms. WILLIAMS. I think what I want to emphasize is that with respect to schools, we have sent the guidance we have available, the blue book that has been held up and a number of letters, to every local education LEAA in the country. We have transmitted information to them multiple times over the past few years. We are sending the information out. I believe it is important to expand that program further than just sending it out, to try and expand some of the training opportunities. But I think that is the right track.

Mr. ANDREWS. OK. The question that I have, and I guess it continues to bother me as I listened to your testimony, especially after hearing Mr. Welch testify, and especially relative to people that clean up these areas and what kind of requirements are required of them, what kind of certification, licensing procedures are necessary for these kinds of contractors, because in my area, this is a living problem. These people are not properly trained. They don't know what they are doing. And they are probably, according to Mr. Welch, causing more problems by cleaning it up than they are by leaving it alone.

How do you know your system is working? How do you know that Houston is responding adequately, or Pasadena or Deer Park?

What kind of monitoring systems does EPA have to know that you are right?

I guess that is what bothers me more than anything. I understand, I am anxious to take a look at the book and see what specifics, what you have done with each of these areas and city councils around the country. But how do you know they are adequately responding to these very, very serious problems?

Ms. WILLIAMS. I think that some of the activities we are still planning to do in the next 6 months will help further. As I mentioned, we are planning to put out model legislation, model statutes. That can be picked up to use for the kind of certification of contractors in some kind of a partnership role with local-State government. I think that is critical. Without that, I don't think it is going to be satisfactory. That is part of the track that I think we are on.

Mr. ANDREWS. The question is, Are you getting feedback from all these areas from your regional people that gives you great confidence that your word is getting out and that these local city councils are responding to you? I am not satisfied that that is happening, and I want you to tell me that you have got a system, that you know in the State of Texas, for instance, that the city councils around my State are responding. That you can tell Mr. Shaw that people in the State of Florida are adequately responding to your notices, and booklets, and bulletins, and when you send out those proposed guidelines of legislation, you have a system to know that those city councils are going to respond appropriately.

Mr. MESSNER. Mr. Andrews, when you are dealing with as many local jurisdictions, with as much diversity as you have, when you look across the landscape in the United States, it is clear to us you could find examples where some local jurisdiction isn't moving as fast as some other jurisdiction. But we have a number of years experience on the scene with the 30 or 40 asbestos coordinators who go out and are actually on the firing line with people. So, we have some reasonable confidence. Now, the kinds of concerns you have expressed are very real concerns about the competence of contractors to do removal and making certain the product is disposed of properly. Those are real time problems we are working on right now. And I think the interesting experience that I went through as head of management of a major Federal agency of dealing with the problem in my own facility, using our technical guidance, is very reassuring to me as one citizen that, first, we know reasonably how to proceed, and, second, we know how to be responsible in proceeding.

Mr. ANDREWS. Let me just close because I would like to talk to you all further. And I want to ask you, a lot of times with these hearings the problems all of us have are time restraints and it is difficult to be specific. But I would like to visit with you further.

Mr. MESSNER. OK.

Mr. ANDREWS. I would like to know what is happening in my State. I would like to know what responses you have served in the State of Texas, what kind of consistency are those responses. I am not satisfied. I am not trying to be critical just to be critical, but I am not confident that the program that you have outlined for us this morning, you even have a way to be confident that it is really

out there working. That people are out there trying to comply and trying to comport within their own financial requirements and political and social requirements. I am not confident of that. And I want to sit down with all of you later and let us talk about Texas as an example. Maybe that would be of benefit to members from other States to get a feel for the results with specificity that your efforts have had thus far. That may help us determine whether or not we need to draft more stringent timetables and what guidelines should be made.

Thank you, Mr. Chairman.

Mr. MESSNER. Thank you, Mr. Andrews.

Mr. YOUNG. Thank you, Mr. Andrews.

I think good points have been made. Taking a look at the personnel, I mean the Members of Congress who are on Investigations and Oversight, I might talk with the chairman of the full committee and ranking minority member, Mr. Levitas and Mr. Molinari, in Investigations and Oversight. Mr. Shaw, Dr. Rowland, and Mr. Andrews also serve on that same subcommittee. Then maybe we could suggest a joint meeting of both committees of Public Works and have our staffs start to put together some sort of hearings we can have jointly to take a look at this whole question that is before us this morning. At least at the staff levels, they can start getting together to see what the problem is and to see if any further legislation is needed.

So, fine. We will move on. Mr. Welch, thank you very much.

Our next witness will be Mr. Lester Mitchell, Commissioner of Public Buildings Service, General Services Administration.

Mr. Mitchell, your remarks will be made part of the record without objection. Go ahead and summarize. You already did I see.

Mr. MITCHELL. It is always generally short, Mr. Chairman.

We appreciate——

Mr. YOUNG. You are good at that, and that is OK with me.

Mr. MITCHELL. I have with me today Mr. William Lawson, on my left, Assistant Commissioner for Design and Construction. Bill will present an update of our prior program in line with earlier discussions with the subcommittee staff. Before we make the presentation, I would comment briefly on this program with particular focus on the regulatory guidance and policies on which GSA's abatement program is based.

First, I would like to clarify our role and maybe that will help members of the committee in responding to some of their previous questions. GSA's principal function is that of building owner. In that regard our basic responsibility is to provide a safe and healthful environment for employees and the public within our Federal buildings. Toward that end, we have concentrated our efforts on implementing the abatement program, which we previously presented to you, and carrying out our containment/removal plans.

We are on schedule with our efforts and are concentrating first on the priority facilities. This is a program to which we have a continuing commitment. Intense management emphasis will continue to ensure that our buildings are completely safe with regard to asbestos as well as other safety and health factors.

We have also been in constant consultation with Federal regulatory bodies to evaluate and test new techniques in asbestos moni-

toring and control. We are working to improve our efforts where possible, as can best be demonstrated by our pilot project at 450 Golden Gate, to use new testing techniques and control procedures based on the advice of NIOSH. Finally, we have established a management control task force that will work with our regional management to assure that all of the policies and procedures established for our entire building inventory are being effectively carried out.

I would now like to introduce Mr. William Lawson, who will give you an update of our current asbestos abatement program.

Mr. YOUNG. Thank you.

Mr. LAWSON. Mr. Chairman, if I could refer you to our handout, I will walk you through that. This will give you an update to the program we presented in March to the committee. Just to recap, if I may.

Just to recap a few points from our March testimony, as Mr. Mitchell indicated, our basic goal in the Public Buildings Service is to provide a safe and healthful work environment. Our program started on an ad hoc basis in the early 1970's, culminating in the establishment of a formal nationwide control program in 1979.

We then surveyed our inventory, from 1980 to 1982, where we found, among the 2,500 buildings in our inventory, 252 contained some form of asbestos. You may recall we were looking for two basic conditions. One is pipe lagging, asbestos insultation around pipes. The other is canvas wrapped sprayed on fireproofing, or insulation, of structural members. Of the 252 buildings, 45 have some form of friable condition worth putting on our priority list.

Mr. Shaw, that is an update of the 44 buildings you referenced earlier. On those buildings and on the others in our inventory, we have instituted nationwide control procedures, basically following the combination of OSHA standards and EPA guidance. I will elaborate on that in a few minutes.

We also established, as we presented to you before, a containment/removal plan for the 45 buildings. Our control procedures, again, just to refresh your memory, included a restriction on friable asbestos in buildings unless it is enclosed, encapsulated, or contained through some authorized means. It also includes that, where there is friable asbestos in a building, it must be sealed, enclosed or removed. We have guidance out to our regional offices along that line.

As I indicated before, we follow both EPA and OSHA guidance in controlling the environment and removing the asbestos. We have instituted, as Mr. Mitchell indicated, a management-control program. We have a contractor assurance program—you asked about that earlier—where in our specifications, we have a bidder's assurance clause requiring that contractors provide us with demonstrated evidence of expertise in asbestos control in order for their bids to be considered responsive.

And we, of course, institute very strict restrictions in the workplace when we are removing asbestos or renovating an area that has asbestos. That is basically a recap of our program. If you look at our current initiatives, where we say "GSA Initiatives, Update of September 1984," these are some things we have done since we last spoke with you.

Under the broad umbrella of our control procedures we indicated we were requesting that NIOSH go out to 450 Golden Gate, look at that building objectively and comprehensively, and give us a report on the adequacy and acceptability of what we were doing there. We requested that they give us a critique of our procedures and policies there so that we can do a better job if necessary. I believe NIOSH will report on that in a few minutes.

Based on that report, we established a pilot project at 450 Golden Gate where we are going to employ a new measurement technique that, to my knowledge, has not been used to date. It is a form of phase contrast microscopy, using an adapter, to get more precise measurements and to introduce a control level more sensitive to the environmental condition in the building.

We continue to work closely with EPA, OSHA, NIOSH, and National Bureau of Standards. We have caucused with all these parties. From a building owner's standpoint, we find a compatibility between the guidelines that EPA has issued and the standards that OSHA has issued. Without trying to be an expert in their areas, we found that we could use the basic concept of EPA, that is, looking at a sample of material and determining if it is hazardous asbestos, while adhering to the standards of OSHA for air monitoring and initiating control procedures if certain air levels or fiber thresholds are exceeded.

From our viewpoint, we found that there is no inconsistency or conflict between the concepts. I think you can adopt the best of both policies. We are doing that at 450 Golden Gate.

Mr. Mitchell indicated that we established a management control task force. That is our way of double checking, and even triple checking in some cases, to make sure that, not only do we have current, adequate policy and technical criteria out in the field, but that everybody is carrying them out. As you are well aware, you can't assure that every party and everybody in a building are always carrying them out correctly. For example, we have had reports from 450 of the contractors not carrying out the right policy. Mr. Welch indicated that contractors in general may be deficient. We want to try to stay on top of those situations to make sure that our people in the field and those with whom we contract carry out these policies and procedures correctly.

As you may recall as well, we indicated perhaps our biggest weakness to date has been in adequate communications with our client agencies. We have been trying to improve this effort, not by trying to sell someone on our program but by trying to inform people, to give them the facts, and to let them decide whether we are doing our job adequately.

We are developing a slide presentation and notices to Federal workers. We first used this approach at 450, shortly after our last hearing. At your request, we went out to 450, met with the employee representatives, presented information, had an interchange and exchange. I believe it was a positive step forward in trying to build some credibility between us as a building owner and them as client agencies. We are also trying to maintain liaison with the regulatory bodies and to give as much information as we can to their experts so that they can advise us on ways to improve our program.

With regard to our containment/removal plan, I can report we have actually accelerated the program since we last reported to you. If you look at the containment/removal schedule update, you will see that for fiscal year 1984 we completed two projects earlier than expected. We have one planned earlier than expected in 1985. Most importantly, Mr. Mitchell has adopted the policy of accelerating the remaining projects. We plan to start the balance of priority in fiscal year 1986. They are all in our 1986 budget.

Therefore you can see in the last sheet of our presentation, which is our inventory, that there will be a shift in the dollars planned from the outyears into fiscal years 1985, 1986, and 1987.

I think you were basically critical of us for not moving forward enough. We have since done so. That is an update of the program, and we will be pleased to answer any questions you may have.

Mr. YOUNG. That is fine. We appreciate that very much, Mr. Lawson.

Mr. Lawson, how and in compliance with what guidelines or regulations does a contractor dispose of asbestos after it has been removed from one of your buildings?

Mr. LAWSON. Well, we follow the EPA regulations that require that any contaminated material be disposed of in a sanitary landfill. That is following EPA regulations.

Mr. YOUNG. We didn't know that.

Mr. LAWSON. Well, that is in our specifications.

Mr. YOUNG. Ms. Williams, is that the guideline?

Ms. WILLIAMS. Yes.

[The following was received for the record:]

Alternatively, use warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(g)(2)(ii).

There are also requirements under the NESHAP for an acceptable asbestos disposal site. An active site must meet the following:

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing material has been deposited; or, at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period is covered with either:

(1) At least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) A resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. This agent must be used as recommended for the particular dust by the manufacturer of the dust suppression agent.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained.

Mr. YOUNG. I asked that question, didn't I?

Ms. WILLIAMS. Yes; and I think the answer that I tried to give was that it was covered under section 112 of the Clean Air Act. I would like to provide the specifics of what that regulation is.

Mr. YOUNG. Let me ask again. How and in compliance with what guidelines or regulations does a contractor dispose of asbestos after removal from a public building? Would you read through that one more time, Mr. Lawson?

Mr. LAWSON. Yes, sir. We dispose of the asbestos in accordance with EPA regulations in a sanitary landfill, and the regulations—I don't know the regulations by heart, but I believe it is for any con-

taminated material that has more than 1 percent of asbestos. I don't know it by verse, but I think it is something along that line.

Mr. YOUNG. In any landfill?

Mr. LAWSON. In any landfill?

Mr. YOUNG. Any landfill, really; right?

Mr. LAWSON. No. A sanitary landfill that is governed by EPA's regulation.

Mr. YOUNG. Are those permitted, Ms. Williams? Off the top of your head, would that be a permitted landfill under EPA's regulations on landfills?

Ms. WILLIAMS. I am sorry, Mr. Chairman, I am going to have—it is not my part of the program and I don't know the details.

Mr. YOUNG. Does anybody in the audience? Is there anybody that has that responsibility?

Mr. Messner.

Mr. MESSNER. Mr. Chairman.

Mr. YOUNG. Who would have that responsibility under the guidelines?

Mr. MESSNER. Lee Thomas is our Assistant Administrator. He is not here. We didn't know we were going to get into this kind of depth. But I promise you we will——

Mr. YOUNG. He is a very good friend of mine, and a very able administrator. Maybe somebody will have—would you ask him to let our office know?

Ms. WILLIAMS. Mr. Chairman, I do have a quick summary I can give you that some of the technical staff have informed us. That is that the particular NESHAP regulation, which is under section 112 of the Clean Air Act, requires bagging of asbestos as it is removed in a certain fashion. It requires certain kinds of controls during transport to the landfill, and requires certain kinds of actions to occur at the landfill, including covering the material once it is bagged with 6 inches of soil.

Mr. YOUNG. I want the answer from Mr. Thomas on particularly how is it handled, let's say in Texas, and what sort of landfill is this material allowed to go into.

Mr. LAWSON. Mr. Chairman, could I correct my statement for the record. I was reading it actually opposite.

Mr. YOUNG. I would be happy to have you do that.

Mr. LAWSON. It is an EPA-approved asbestos disposal site in which we have to dump the asbestos material that is greater than 1 percent. If it is less than 1 percent, you can put it in a sanitary landfill. OK? So it is just the opposite.

Mr. YOUNG. Say it again now, Mr. Lawson. In your removal out in San Francisco.

Mr. LAWSON. Yes; anything that is in 450 that is contaminated goes to an EPA-approved asbestos disposal site.

Mr. YOUNG. Which has approval of the Environmental Protection Agency?

Mr. LAWSON. Yes, sir, as per their regulation. Anything lower than 1 percent can go into a sanitary landfill.

Mr. SHAW. I have a question. Asbestos itself is a natural material found in the environment. It is not manufactured, is it? Don't we mine asbestos? Isn't that where we get it from?

Mr. LAWSON. I believe so.

Mr. SHAW. So the question of its disposal, as long as it is not flaking off and flying through the air, it is not a threat to the water supply, is it?

Ms. WILLIAMS. The information that we have right now would indicate that our primary concern is for any air transport of asbestos.

Mr. SHAW. As long as you bury it, you are probably doing all right, aren't you? Maybe I shouldn't ask you to answer that if you have any questions because I would hate for you to misstate that, but perhaps if you could get us a little more information on that, I never thought of the disposal of it as any great problem as long as it was buried and covered up and was taken out of the atmosphere, so it wasn't floating around in particles, but I would like to know that too.

Ms. WILLIAMS. I would be glad to provide it, but you basically are correct, but what the rule does attempt to do is present guidance for how it is kept out of the air during the time it is removed and disposed of.

[The following was received from Ms. Williams:]

Mr. Shaw's presumption is correct. EPA believes that airborne asbestos fibers, from friable asbestos-containing materials or improperly handled asbestos waste, constitute the potential health hazard. EPA's focus is on minimizing the release of asbestos into the atmosphere.

Mr. YOUNG. Mr. Mitchell, I guess maybe this is the last question. Do you know why EPA went out on their own and surveyed buildings in which their employees were housed, since I assumed GSA had already surveyed them? Was there any discrepancy that you were aware of between the GSA and EPA surveys?

Mr. MITCHELL. Mr. Chairman, I would like to defer to the EPA. I will tell you that EPA operates the North Triangle Park activity under a total delegation from GSA.

Mr. MESSNER. If I could add to that, Mr. Chairman, we in EPA have authorities in the areas of research facilities for our own construction and our own leasing.

We, therefore, have special responsibility for certain kinds of facilities.

At the time that the Deputy Administrator asked me to conduct these surveys, he felt that the agency had to be exemplary in its own efforts, particularly since EPA commenting on the behavior of others first in schools and then, as you will see later in the month, about all public buildings. He wanted to be absolutely certain that we knew what our own circumstances were.

It proved to be, I think, a very useful experience for not only EPA, but other Federal agencies that we have been able to communicate with.

Mr. YOUNG. Do you know how many of the EPA buildings had previously been surveyed by GSA, and were there any discrepancies between the results of your survey and the earlier GSA survey?

Mr. MESSNER. Mr. Chairman, the GSA had in its listing one of the facilities of EPA, and that was the Federal Building in New York, I believe.

Mr. YOUNG. Pardon me? Where?

Mr. MESSNER. In New York City, and needless to say, they had a nationwide scope. We only had the 200-some-odd buildings that we

were responsible for. Subsequently we asked GSA to participate in some surveys with us in Boston comes to mind as a site that we felt they might want to take another look at with us and they did that, I believe, thus adding it to their area of concern.

Mr. YOUNG. Are their standards different?

Mr. MESSNER. Time changes the condition of the materials. I know in Research Triangle Park where we found what we considered to be the worst case, water damage and atrophying of the asbestos had caused it to come loose. We found evidence of it in plenums and on employee desks, and that is a function of time, so I think the kind of detailed assessment that we did was the most thorough kind of assessment.

We literally opened every door and looked under every tile and did a very thorough piece of work, so it is a question of degree and timing. I think that again, GSA is working very hard not only with us, but with OSHA and other regulatory agencies to be right in the most modern applications of what we know about this particularly dangerous substance.

Mr. YOUNG. Asbestos, asbestos, who has got the asbestos? I am sure that you are aware of the September 11, 1984 article—this is the New York Times:

> The Environmental Agency's survey found asbestos was present in 42 of the 270 buildings and in twelve of those 42 buildings, including the agency's headquarters, the materials were found to be loose and crumbling and therefore potentially hazardous.

Mr. MESSNER. Yes, sir, I read that article. That article is a recapitulation of information that we provided.

Mr. YOUNG. Did you say misinformation?

Mr. MESSNER. No; a recapitulation. It is sort of a summary.

I believe the article is by Mr. Shabecoff of the New York Times. He was drawing the information from materials we made public. It is essentially an accurate article on the factual part of it.

Mr. YOUNG. Mr. Shaw, do you have any questions?

Mr. SHAW. Just this one comment. I know that there have been a lot of headlines that have been made over public buildings and what-not. I, for one, having sat on this particular subcommittee for 2 years, and looking over many, many projects that we have examined that GSA has brought to us, my personal opinion of the action that GSA has been that they have been very progressive; they have been out actively looking for the problems, looking for the solution, bringing them to us for action.

Obviously, with a large inventory of buildings there are bound to be some errors made and some particular areas of disagreement. I find that is always the case when you are dealing with politicians, particularly politicians versus bureaucrats.

I find they are so similar in so many ways, but we seem to struggle to look for our differences, but I think that you have done a reasonably good job, and I would compliment you for it.

Mr. LAWSON. Thank you, Mr. Shaw.

Mr. YOUNG. This is my last question, Mr. Messner, I think, of you, and then probably we ought to break for half an hour or 45 minutes, and then I will continue with everybody else.

You never did tell me what the discrepancies were between GSA and EPA's surveys.

Mr. MESSNER. We added to their areas of concern a building in Boston that we thought required action and they have agreed with that, so it was——

Mr. YOUNG. What were the differences?

Mr. MESSNER. The differences in the findings? It was a matter of degree over time. The condition of the asbestos that we saw was worse than when they took their initial look at it, so it caused us more concern, and when we did the survey I met with Bill Lawson. His people came back to do the survey with us, to look closely at the situation.

Mr. YOUNG. That was the only one that you two looked together at then?

Mr. MESSNER. I believe that we have invited Mr. Mitchell's staff to accompany us on as many of the trips as possible to all of our facilities, just so they could gain the experience and perhaps develop a reasonable way of handling the problem.

Les, I don't know how many actually came out.

Mr. YOUNG. Could you write us a detailed letter on that specific situation in Boston?

Mr. MESSNER. Surely.

Mr. YOUNG. And the number?

Mr. MESSNER. I believe they have been on four or five trips, Mr. Chairman. We will provide the exact number for the record.

Mr. YOUNG. We are going to break for about a half hour to 45 minutes and let everybody have a chance to eat. We will resume at 2:30. I notice other members of the committee want to come back.

To Mr. Messner and Mr. Mitchell, we will submit questions to your agencies, and then we will move on this afternoon with Mr. Craig and the balance of the panel.

Thank you all very much for your attendance here this morning.

[Whereupon, at 1:45 p.m., the subcommittee was recessed, to reconvene at 2:30 p.m., the same day.]

[The following was received from Mr. Messner:]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Washington, DC, October 15, 1984.*

Hon. ROBERT A. YOUNG,
*Chairman, Subcommittee on Public Buildings and Grounds, Committee on Public Works and Transportation, House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: During my testimony before your subcommittee on Octcber 2, 1984, you requested specific information on the asbestos situation in the John F. Kennedy Federal Office Building, Boston, and you requested specific information on the number of studies GSA participated in with EPA.

The asbestos situation in the JFK Building is described in detail in the enclosed EPA asbestos assessment report. GSA personnel participated in this assessment and were party to the drafting and presentation of the recommendations.

GSA personnel accompanied EPA assessment teams during nine of its assessments between September 13 and September 25, 1984.

If you have any questions or if I may be of any assistance, please contact me.

Sincerely yours,

HOWARD M. MESSNER,
*Assistant Administrator for Administration and Resources Management.*

[Memorandum]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Washington, DC, October 12, 1984.*

Subject: Results of the assessment of asbestos in the JFK Federal Building and Analex Building.

From: John C. Chamberlin, Director, Office of Administration.

To: Michael R. Deland, Regional Administrator (Region I).

Paul G. Keough, Deputy Regional Administrator (Region I).

Consistent with Al Alm's memo to you on asbestos in EPA facilities, one of our technical teams assessed the asbestos in the JFK Federal Building and the Analex Building. The team presented in the analytical results and its findings and recommendations in a closing conference conducted by Paul Keough on September 13. The team also provided at that time some on-the-spot technical support to meet the recommendations. Copies of these documents are attached. As requested in the closing conference, please provide the Occupational Health and Safety Staff with a written response to the team's recommendations within 30 days.

We are continuing to work very closely with GSA to resolve the problems identified at the JFK Federal Building. We will keep you informed of the progress.

The technical team was most appreciative of the cooperation and support provided by your staff during the team's assessment of the asbestos materials.

Attachments.

BUILDING EVALUATION FORM #2
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII - TOXICS AND PESTICIDES SECTION Date: 9/13/84
324 EAST 11TH STREET
KANSAS CITY, MISSOURI 64106 Dist. No.: Region 1

Room: EPA Region I occupied space Sample Number(s):

Building: JFK Federal Building Address: Boston, MA 02203
Evaluator: Karen Reed, OHSS/OA/OARM FTS 283-3646 (Reed)
Paul Heffernan, RAC, Region 1 Phone No.: FTS 223-4859 (Heffernan)

Coated Area: Ceiling (Wall(s) under windows) (Whole Ceiling Above Suspended Ceiling)
Pipe Lagging Boiler Insul. Other:

Type of Ceiling: Concrete 3 Coat Plaster System Suspended Metal Lath
Concrete Joists and Beams Tile (Suspended Lay-In Panels)
Metal Deck Corrugated Steel Steel Beam or Bar Joists

Ceiling Height: 9 ft.

Ceiling Shape: (Flat) Dome Other (draw): Concrete Pan
Folded Plate Barrel

Type of Wall (If Coated): (Concrete) Rough Concrete Masonry
N/A
Plasterboard Other:

Amount of Friable Material in Area being Evaluated: 73,000 sq. ft.

Description of Coating: (Fibrous (highly friable)) Air Cell (Corrugated paper insulation) Granular/ Cementitious (soft) Concrete Like (hard)

Thickness: 1-1.5 inch(es) Is thickness uniform: (Yes) No

Coating debris on Floor/Furniture/Work Surfaces: Yes (No)

Curtains, expandable partitions, etc. being pulled across coating: Yes (No)

Coating is Painted: Yes (No) Coating is tamped: Yes (No)

Type of Lighting: Surface Mounted Suspended (Recessed)

No. of Lights: ——— Type of Heating/Cooling System: Steam

Type of Floor: Concrete Tile Wood Carpet Other: Tile in outer halls

What is above top floor being evaluated? Another similar office floor

Comments: Asbestos-containing insulation is in an air return plenum. Minor damage or deterioration in evident. Debris present on top of ceiling tiles.

(continue on back)

- Evidence of deterioration or delamination from the underlying surface (substrate)

Numerous small lumps of insulation were seen on the top of ceiling tiles in area examined.

- Evidence of physical damage

As above. There is an historical record of disturbance and damage due to physical contact during building maintenance and renovation.

- Evidence of water damage

Ceiling tiles stained in several locations.

- Proximity to air plenum or direct airstream

Insulation material is in a return air plenum.

- Exposure (i.e., is it visible), accessibility (to building occupants and maintenance personnel), and the degree of activity (air movement, vibration, movement of building occupants)

Periodic episodes of potential exposure have occurred. Material becomes accessible whenever ceiling tiles are removed.

- Change in building use

None anticipated.

Recommendations:

Access above ceiling tiles only during off hours or when space is not occupied. Cover all furnishings with plastic sheet prior to removing tiles. HEPA clean all area after entry above ceiling. Post all floors. Inform all employees. Remove all asbestos-containing insulation from ceilings and wall areas within next 3 years. Establish an operation and maintenance plan. Implement the O+M plan (see attached).

Cease all routine and non-emergency construction activity that disrupts the asbestos until an adequate plan has been approved by OHHS for conducting these activities in a manner that will prevent that release of asbestos fibers into the EPA work environment.

BUILDING EVALUATION FORM #2
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII - TOXICS AND PESTICIDES SECTION Date: 9/13/84
324 EAST 11TH STREET
KANSAS CITY, MISSOURI 64106 Dist. No.: Region 1

Room: G-31 Storage Area Sample Number(s):

Building: JFK Federal Building Address: Boston, MA 02203
Evaluator: Karen Reed, OHSS/OA/OARM FTS 382-3646 (Reed)
Paul Heffernan, RAC, Region 1 Phone No.: FTS 223-4859 (Heffernan)

Coated Area: (Ceiling) Wall(s) Structural Members Above Suspended Ceiling
Pipe Lagging Boiler Insul. Other:

Type of Ceiling: (Concrete) 3 Coat Plaster System Suspended Metal Lath
Concrete Joists and Beams Tile Suspended Lay-In Panels
Metal Deck Corrugated Steel Steel Beam or Bar Joists

Ceiling Height: 12 ft.

Ceiling Shape: (Flat) Dome Other (draw): Concrete Pan
Folded Plate Barrel

Type of Wall (If Coated): Smooth Concrete Rough Concrete Masonry
N/A
Plasterboard Other:

Amount of Friable Material in Area being Evaluated: 1,184 sq. ft.

Description of Coating: (Encapsulated Fibrous (highly friable)) Air Cell (Corrugated paper insulation) Granular/ Cementitious (soft) Concrete Like (hard)

Thickness: 1-1.5 inch(es) Is thickness uniform: (Yes) No

Coating debris on Floor/Furniture/Work Surfaces: (Yes) No

Curtains, expandable partitions, etc. being pulled across coating: Yes (No)

Coating is Painted: (Yes) No Coating is tamped: Yes (No)

Type of Lighting: Surface Mounted (Suspended) Recessed

No. of Lights: Type of Heating/Cooling System: To be determined

Type of Floor: (Concrete) Tile Wood Carpet Other:

What is above the room being evaluated? Outside plaza

Comments: Active water leak is beginning to cause delamination.

Evaluator's signature:

(continue on back)

- Evidence of deterioration or delamination from the underlying surface (substrate)

Water stained area in central portion of the "cage" is beginning to separate from the substrate.

- Evidence of physical damage

None

- Evidence of water damage

Stained area, rust on duct under stained ceiling area. Efflorescence of concrete.

- Proximity to air plenum or direct airstream

To be determined

- Exposure (i.e., is it visible), accessibility (to building occupants and maintenance personnel), and the degree of activity (air movement, vibration, movement of building occupants)

Ceiling is exposed, accessible. Insulation debris in present on top of suspended ducts and on top of wood frame partitions.

- Change in building use

None anticipated.

Recommendations:

Prior to occupancy or use of the space, remove asbestos-containing debris, HEPA clean surfaces, wet wipe surfaces, wash floor. Regular surveillance of water damaged area. Eventual removal of the material, as soon as possible.

Operations and Maintenance Plan at minimum should include:

1) Any work (including electrical, plumbing, air conditioning, sprinkler system) involving penetration of suspended ceiling or movement of metal partition walls be performed using appropriate asbestos safety procedures (such as--workers equipped with respirators, work only performed after hours, all debris immediately cleaned up with HEPA vacuum, cover office furniture and other objects with plastic...)

2) Only wet cleaning of tile floors, HEPA vacuuming of carpets and dusting with damp cloths in areas that have been contaminated - under supervision of GSA

3) Close open ceiling panels in all rooms

4) Notify all employees of exact locations of asbestos containing materials and of employees responsibilities to protect themselves (should include method of notifying future employees)

5) Post areas in which asbestos insulation is located

6) Issue policy statement that no employees are to hang items from the ceiling (such activities are presumed to result in disturbance of suspended ceiling tile and could result in fiber release from the air plenum above)

7) Annual (minimum) reinspection and reevaluation of asbestos insulation; participate in yearly inspection performed by GSA.

8) Coordinate with GSA so that renovation activities in non-EPA space do not contribute to asbestos fiber release into EPA occupied space

9) Brief all maintenance employees concerning safe work practices involving asbestos and issue these employees EPA's asbestos guidelines

AFTERNOON SESSION

Mr. YOUNG. The subcommittee will reconvene.

We will now hear from Mr. Roger P. Craig, Assistant Postmaster General, Real Estate and Buildings Department, U.S. Postal Service.

Mr. Craig, the full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

STATEMENT OF ROGER P. CRAIG, ASSISTANT POSTMASTER GENERAL, REAL ESTATE AND BUILDINGS DEPARTMENT

Mr. Chairman, I am Roger P. Craig, Assistant Postmaster General, Real Estate and Buildings Department, United States Postal Service. I am pleased to appear before the Subcommittee today to discuss the Postal Service's asbestos control program. With me today are Mr. Jerry A. Jones, General Manager, Safety Compliance Division, Employee Relations Department, and Mr. Warren L. Walker, program manager for the asbestos control program in the Real Estate and Buildings Department.

The Postal Service is committed to providing a safe and healthful workplace for its employees. The asbestos control program is an example of our commitment. It is organized as a preventive program to eliminate the potential for exposure to airborne asbestos fibers.

In 1977, the Postal Service banned the use of sprayed-on asbestos fireproofing in new buildings and renovations. In addition, we began a process of inspecting existing buildings for the presence of sprayed-on asbestos fireproofing, and procedures to correct potential hazards were set up. These procedures included the removal or encapsulation of all sprayed-on asbestos insulation, regardless of condition.

In July of 1979, the Postal Service broadened its effort by initiating a survey to identify all friable asbestos materials in facilities. A task force was formed to develop policy and procedures to survey all of our approximately 34,000 postal facilities (of which about 4,000 are owned and about 30,000 are leased), with timely corrective action to be required when friable asbestos materials are identified. The task force consulted with appropriate staff members at the Environmental Protection Agency and the Occupational Safety and Health Administration.

A comprehensive program proposed by the task force was published by our Employee Relations Department in a Management Instruction entitled "Friable Asbestos-Containing Material Control Program," issued on August 15, 1980. The program includes three phases.

Phase One, which has been substantially completed, consisted of training field maintenance personnel in inspection techniques and inspecting all postal facilities, owned and leased, in order to identify suspect friable materials. A friable material is defined by the Environmental Protection Agency as a material "that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure." When a suspect friable material is identified, the maintenance inspector compiles an "exposure assessment" based on EPA guidelines. This helps us record a material's current condition so that we can assess the material's potential for future fiber release. In addition, bulk samples are taken and sent to postal safety personnel for Phase Two.

Phase Two requires safety personnel to obtain qualified laboratory analysis on the bulk samples collected in the field. Since the presence of asbestos cannot be detected by the human eye, specific laboratory tests must be utilized. If an asbestos material is found, safety personnel arrange for air tests to be performed by, or under the supervision of, industrial hygienists in order to determine if any airborne asbestos is present.

Phase Three requires the Real Estate and Buildings Department to evaluate the field and laboratory analyses, and determine the most appropriate corrective action. As stated previously, our Department's policy is to remove completely or encapsulate all sprayed-on asbestos insulation. Less drastic corrective actions are permissible for friable asbestos materials other than sprayed-on materials.

Originally, training was provided to our personnel through the Environmental Protection Agency and through several private training programs. In order to ensure the availability of on-going training, specially tailored to the Postal Service's program, we developed our own training course in 1983. This course is offered at the Postal Service Management Academy in Potomac, Maryland. It consists of a four

and one-half day program of classroom and hands-on experience. To date, over 185 employees have completed this course.

Since the inception of our Asbestos Control Program, we feel significant progress has been made. Building inspections have been completed on virtually all postal facilities. Laboratory tests have been completed on 75 percent of these buildings. We have identified 1,174 facilities that contain friable asbestos materials. Corrective actions have been completed in 722 facilities, or 61 percent of all buildings known to have friable asbestos materials. During the period between the time asbestos materials have been identified and corrective actions have been completed, reevaluations are conducted in the field at six month intervals. These reevaluations consist of visual examinations and air testing to ensure the safety and health of building occupants and to identify changing conditions.

To date, the Postal Service has spent over $25 million for asbestos abatement design and construction. Currently, we estimate that we will need to spend an additional $25 million to complete asbestos abatement activities at facilities known to contain friable asbestos.

In conclusion, we believe the asbestos control program of the Postal Service has effectively identified facilities asbestos materials, and has made significant progress in the control of friable asbestos materials when found. We will continue to take preventive measures necessary to remove or control friable asbestos materials.

This concludes my prepared statement. We will be pleased to address any questions.

Mr. YOUNG. Please proceed.

## TESTIMONY OF ROGER P. CRAIG, ASSISTANT POSTMASTER GENERAL, REAL ESTATE AND BUILDINGS DEPARTMENT, U.S. POSTAL SERVICE

Mr. CRAIG. Good afternoon. I am Roger Craig, Assistant Postmaster General, Real Estate and Buildings Department, U.S. Postal Service.

With me in the room today are Jerry A. Jones, General Manager, Safety Compliance Division, Employee Relations Department, and Warren L. Walker, Program Manager for the Asbestos Control Program in the Real Estate and Building Department.

I am pleased to be before the subcommittee today to discuss the Postal Service's Asbestos Control Program.

The Postal Service is committed to providing a safe and healthful workplace for its employees. The Asbestos Control Program is an example of our commitment. It is organized as a preventive program to eliminate the potential for exposure to airborne asbestos fibers.

In 1977, the Postal Service banned the use of sprayed-on asbestos fireproofing in new buildings and renovations. In addition, we began a process of inspecting existing buildings for the presence of sprayed-on asbestos fireproofing, and procedures to correct potential hazards were set up. These procedures included the removal or encapsulation of all sprayed-on asbestos insulation, regardless of condition.

In July 1979, the Postal Service broadened its effort by initiating a survey to identify all friable asbestos materials in facilities. A task force was set up to develop policy and procedures to survey all of our approximately 34,000 postal facilities, of which about 4,000 are owned and about 30,000 are leased, with timely corrective action to be required when friable asbestos materials are identified. The task force consulted with appropriate staff members at the Environmental Protection Agency and the Occupational Safety and Health Administration.

A comprehensive program proposed by the task force was published by our Employee Relations Department in a management instruction entitled "Friable Asbestos-Containing Material Control Program," issued on August 15, 1980.

Basically, the program takes place in three phases. In phase one, we train the employees who are involved in the inspection process and conduct inspections of the facilities.

We take samples, bulk samples, of materials that strike us as possibly containing asbestos, and that moves the process to phase two. In phase two, laboratory analyses are performed on the bulk samples and we determine whether there is or is not asbestos material in the bulk samples.

Based on the results of those bulk samples and the analysis of them by the Real Estate and Buildings Department, we either have to take corrective action or not. Our policy is that, when there is friable sprayed-on asbestos insulation material, we remove or encapsulate it. Less drastic corrective actions are permissible for friable materials other than sprayed-on materials.

Training for employees involved in this activity was originally provided by the Environmental Protection Agency and through several private training programs. Later we developed our own Postal Service training program, and we have supplied certain background information on this program to the subcommittee staff in advance of this meeting.

This postal-designed training program is offered at the Postal Service Management Academy in Potomac, MD and consists of a 4.5-day program of classroom and hands-on experience.

To date, over 185 employees have completed this course, and in excess of 400 employees completed the course that was offered through the good offices of the Environmental Protection Agency.

Since the inception of our Asbestos Control Program, we feel significant progress has been made. Building inspections have been completed of virtually all postal facilities. Laboratory tests have been completed on 75 percent of these buildings. We have identified 1,174 facilities that contain friable asbestos materials.

During the period between the time asbestos materials have been identified and corrective actions have been completed, reevaluations are conducted in the field at 6-month intervals. These reevaluations consist of visual examinations and air testing to ensure the safety and health of building occupants and to identify changing conditions.

To date, the Postal Service has spent over $25 million for asbestos abatement design and construction. Currently, we estimate that we will need to spend an additional $25 million to complete asbestos abatement activities at facilities known to contain friable asbestos.

In conclusion, we believe the Asbestos Control Program of the Postal Service has effectively identified facilities with asbestos materials, and has made significant progress in the control of friable asbestos materials when found. We will continue to take the preventive measures necessary to remove or control friable asbestos materials.

This concludes my prepared statement. We will be pleased to address any questions.

Mr. YOUNG. That is fine, Mr. Craig. I want to compliment you on your fine statement.

Next, Dr. James Melius, Chief of Health Hazards Evaluation Branch, National Institute of Occupational Safety and Health.

Dr. Melius, the full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

STATEMENT OF JAMES M. MELIUS, M.D., DR. P.H., CHIEF, HAZARD EVALUATIONS AND TECHNICAL ASSISTANCE BRANCH, DIVISION OF SURVEILLANCE, HAZARD EVALUATIONS AND FIELD STUDIES, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, CENTERS FOR DISEASE CONTROL, PUBLIC HEALTH SERVICE, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Mr. Chairman and members of the subcommittee, I am Dr. James M. Melius, Chief, Evaluation Hazard and Technical Assistance Branch, Division of Surveillance, Hazard Evaluations and Field Studies, National Institute for Occupational Safety and Health (NIOSH), of the Centers for Disease Control. I am pleased to have been invited to discuss the NIOSH investigation of the potential exposure to asbestos in the Phillip Burton Federal Building and Courthouse in San Francisco. With me today is Richard A. Lemen, Director of the Institute's Division of Standards Development and Technology Transfer. Mr. Lemen, as you may recall, testified before this Subcommittee earlier this year concerning the health effects of asbestos exposure and NIOSH recommendations in this area.

NIOSH first became involved in assessing the potential for asbestos exposure at the Phillip Burton Federal Building in 1976. At that time, our Regional Consultant in San Francisco was asked to evaluate potential asbestos exposures during renovation work in the building. Our monitoring revealed asbestos levels well above the OSHA standard of 2 fibers of asbestos per cubic centimeter of air averaged over an eight-hour period, with a maximum ceiling concentration of ten fibers per cubic centimeter at any one time, and we recommended that appropriate steps be taken to reduce exposure.

From that time, until this year, we were aware of the GSA monitoring activities and the continued concern about the building but had no formal involvement. In March of this year, our Regional Consultant was requested by representatives of the building employees to monitor asbestos levels in the lobby of the building. We conducted limited sampling and found no airborne asbestos in these samples.

At the same time (March, 1984), we received a written request from Mr. L.L. Mitchell, Commissioner, Public Buildings Service of the General Services Administration to conduct an evaluation of risks from potential asbestos exposure throughout the building. In May 1984, Kenneth Wallingford and the NIOSH regional consultant in San Francisco conducted a site visit. They met with local GSA management, the Tri-Agency Asbestos Study Committee representatives (which is a group composed of building occupants representing three federal agencies—the Department of Housing and Urban Development, the Securities and Exchange Commission, and the Federal Trade Commission), union representatives, and other concerned building occupants to obtain information about potential asbestos exposure and about the concerns of those individuals involved. They also obtained copies of all pertinent reports, memoranda, letters, and law data generated in previous evaluations of this building by GSA and other groups. In addition, they conducted a walk-through tour of the building to inspect the fireproofing, the mechanical system, and the areas where the fireproofing had been removed.

After reviewing this information, we prepared a report to Mr. Mitchell outlining our findings and recommending a series of steps which should be taken by GSA to develop a sound program for handling the potential asbestos exposure in the San Francisco building. We also met with GSA officials in Washington in late August to discuss our report and to clarify our specific recommendations.

Let me emphasize that the recommendations in our August 6 letter to GSA—a copy of which has been provided to the Subcommittee—are designed to address specifically the potential asbestos exposure at this building and the concern of the building occupants there. Thus, the specific recommendations may not be applicable to all buildings with asbestos insulation. I should also emphasize that many of these recommendations were already made by other parties who had previously assessed the potential for asbestos exposure in the building. It should also be noted that NIOSH provides this guidance in an effort to provide public health recommendations to prevent unnecessary exposure to asbestos.

We believe that by incorporating our recommendations into the existing asbestos control program at the Phillip Burton Federal Building and Courthouse, GSA can develop a program which will adequately protect the building employees during the abatement operations.

Thank you for the opportunity to testify today. I and my colleagues would be glad to answer any questions.

Mr. YOUNG. Please proceed.

**TESTIMONY OF DR. JAMES MELIUS, CHIEF, HEALTH HAZARDS EVALUATION BRANCH, NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH, ACCOMPANIED BY RICHARD LEMEN, DIRECTOR, DIVISION OF STANDARDS DEVELOPMENT AND TECHNOLOGY TRANSFER, NIOSH**

Dr. MELIUS. Thank you, Mr. Chairman, members of the subcommittee.

With me today is Richard Lemen, Director of the Division of Standards Development and Technology Transfer.

Mr. Lemen, if you remember, testified before an earlier subcommittee hearing concerning the health effects of asbestos exposure and NIOSH recommendations in those areas. I do not want to repeat his testimony.

NIOSH is involved in asbestos in buildings and schools in three major areas. First, we provide technical assistance to employers, employees, and other governmental agencies regarding various occupational health hazards, including asbestos in buildings. We have provided this assistance in a number of situations both in public buildings and occasionally in schools.

One of these buildings is the Phillip Burton Federal Building, where we have been involved since 1976 with the asbestos problem. More recently in March 1984 we received a written request from Mr. Mitchell, the Commissioner of Public Buildings Service, asking us to conduct an evaluation of the risks from asbestos exposure in that building.

We sent an industrial hygienist and another NIOSH employee to that building. We reviewed all of the materials as outlined in my testimony.

After completing this review, we prepared a report to Mr. Mitchell. A copy of that report has been made available to the subcommittee today outlining our findings and recommendations including a series of steps which could be taken by GSA to develop a sound program for handling the potential asbestos exposure in that building.

I want to emphasize that our recommendations are designed to specifically address asbestos exposures in that building, where there has been found to be an asbestos problem, and where abatement activities are being planned.

Thus, some of our recommendations may not be applicable to all buildings.

Another building we have been involved in, which was mentioned in both EPA's testimony and in the opening statement here, was the National Center for Health Statistics Building in Research Triangle Park, NC.

I would like to clarify a few points that were made earlier. Unlike EPA, HHS employees continue to occupy that building, al-

though we did evacuate our employees temporarily at the time the asbestos was noticed. We also conducted a complete assessment of the asbestos problem in that building.

Our assessment showed no airborne asbestos exposures and only small amounts of asbestos in dust samples collected in the building. We have initiated changes in the ventilation system and changes in clean up procedures in that building in order to reduce the chance of any asbestos exposures for those employees. This has allowed, we feel, safe, occupancy of the building, while further actions are taken regarding the removal of the asbestos insulation from that building.

I would like to point out that we do not see our assessment as really differing from EPA's in major ways, in that EPA was occupying one wing of the building, and the wing of the building they were in had the worse asbestos problem.

NIOSH also has other programs in the area of asbestos. We conduct considerable research on asbestos, including development of monitoring methods. We have developed a new phase contrast microscopy measure which allows detection of a much lower level of asbestos than had previously been available with these methods.

We are also in the process of developing a new electron microscopy method for detection of airborne asbestos exposures.

We also have a project looking at the steps that are needed to protect workers involved in asbestos abatement actions. This includes personal protection and other procedures needed to protect them from any risk from this type of job.

We are also conducting research on the health effects of asbestos. We also have as part of our mandate to develop and recommend standards to other agencies, particularly to the Occupational Safety and Health Administration, and to disseminate our information that we gather to interested parties on the outside in such area as asbestos in public buildings and schools.

I would like to mention two areas where we are working now. We are currently finalizing a letter that will go to all State health departments, providing them with a summary of the information on the health risks of asbestos in public buildings and schools.

This letter is being prepared by the Center for Disease Control, NIOSH, in conjunction with the Center for Environmental Health. This letter should go to all State health departments some time within the next few weeks.

Another effort which we have just initiated is the development of a document that would outline procedures needed to protect workers during asbestos abatement procedures. This is intended for both workers doing the abatement procedures or tearouts, and for workers in the general area within these buildings.

This document will include information on monitoring procedures, on necessary protective measures and on work practices and so forth that are needed to reduce exposure to asbestos during these procedures.

We have just initiated work on this document and we hope to have it done over the next several months. We plan to make this widely available to people who need to monitor this activity and who will become involved in evaluating abestos in public buildings and schools.

I will be glad to answer any questions at the appropriate time. Thank you.

Mr. YOUNG. Thank you very much, Dr. Melius I will insert into the record at this point a letter dated August 6, 1984 from NIOSH to L.L. Mitchell, Commissioner, Public Buildings Service, General Services Administration.

[The letter referred to follows:]

CENTERS FOR DISEASE CONTROL,
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY & HEALTH,
ROBERT A. TAFT LABORATORIES,
*Cincinnati, OH, August 6, 1984.*

Mr. L.L. MITCHELL,
*Commissioner, Public Buildings Service,*
*General Services Administration, Washington, DC.*

DEAR MR. MITCHELL: On March 23, 1984, The National Institute for Occupational Safety and Health (NIOSH) received your request to conduct a thorough and comprehensive health hazard evaluation for risks from potential asbestos exposure at the Federal Building and Courthouse, 450 Golden Gate Avenue, San Francisco, California. This letter will summarize the results and recommendations from this evaluation.

From May 1 through May 3, 1984, an initial site visit was conducted by Ken Wallingford, NIOSH industrial hygienist, and Mel Okawa, regional program consultant, NIOSH Region IX. During this site visit, meetings were held with GSA Region IX Management, Tri Agency Abestos Study Committee (TAASC) representatives, union representatives, and other concerned building occupants to obtain information about the asbestos problem and the various concerns of those individuals involved. In addition, a walk-through tour of the building was made to visually inspect the existing fireproofing, the mechanical system, and the areas where the fireproofing had been removed, Copies of all pertinent reports, memos, letters, and raw data were obtained or requested so that a thorough and comprehensive review of the asbestos problem in this building could be accomplished. All of the documentation obtained on-site or subsequent to the site visit was reviewed and follow-up telephone conversations conducted for clarification as necessary.

The Federal Building at 450 Golden Gate was completed in 1964 and is 20 stories high. Approximately 4,500 people representing several Federal agencies work in the building. During construction, structural beams and the underside of the steel floor decks were sprayed with an asbestos-containing fireproofing. Bulk sample data have shown this fireproofing to contain 30 to 40 percent chrysotile asbestos. In the occupied spaces, suspended ceilings form a plenum with the floor decks which is used to return air to the heating, ventilating, and air-conditioning (HVAC) systems. This directly exposes the friable asbestos-containing fireproofing in the plenum to the HVAC air.

NIOSH first became involved with the building's asbestos problem in 1975, when air sampling was conducted for GSA by our Region IX industrial hygienist. Since then, several occupational health groups (including NIOSH) have periodically collected samples, reported findings, and made recommendations to GSA concerning the asbestos problem in this building. During this time, GSA Region IX has developed and implemented guidelines and procedures to direct the ongoing maintenance, renovation, and abatement activities that may involve potential asbestos exposure. These data found the bulk of the review material for this evaluation.

The remainder of this letter contains several discussion sections, each with a subheading, and with a recommendations section at the end. This was done to more clearly address the specific technical concerns of the individuals involved.

SMALL FIBERS

The term "small fibers" refers to those asbestos fibers less than 5um in length and/or less than 0.25um in diameter that are not counted using the phase contrast microscopy (PCM) method because of either the counting rules or the analytical resolution.

The fact that many of these small fibers normally exist in all occupational asbestos exposure situations is not a recent finding but was common knowledge to the researchers that developed the PCM method. This method was developed essentially as a practical and economic way to evaluate airborne asbestos exposure using existing technology. Since electron microscopy (EM) was only an emerging technology at the time, and few EM's were available for routine work, PCM was the preferred

method of choice. Because the wavelength of visible light is the limiting factor for analytical resolution with the PCM method, not all fibers could be seen. The 5um length criterion was selected because fibers of this length could easily be seen by trained microscopists using available PCMs. The 5um length criterion was therefore, not selected due to an abundance of toxicological data implicating only fibers of that size or larger as hazardous, but because of the PCM limitations of resolution and the need to have standardized counting rules. The exposure concentrations derived from using this criterion provided an "index" of asbestos exposures (not a total fiber exposure) with an acceptable level of analytical precision.

The PCM method has become an internationally accepted analytical technique for airborne asbestos and, except for Germany and the USSR, all of the occupational exposure standards and recommended criteria for airborne asbestos have been developed in units that can be evaluated by using the PCM method; usually expressed as fibers greater than 5um (>5um) in length per cubic centimeter (cc) of air. Therefore, there are currently no occupational asbestos standards that are referenced to total fiber exposures or, more specifically, to small fiber exposures.

In an effort to establish dose-response relationships, the majority of epidemiological studies of workers exposed to asbestos have correlated the incidence of asbestos-related disease with airborne fiber exposures as determined by the PCM method. Therefore, although workers were actually exposed to asbestos fibers of all sizes (total fibers), the resulting health risk has been correlated only with this "exposure index" (fibers>5um in length). Thus, essentially all asbestos-related health effects can be directly compared to the airborne asbestos exposure standards. To determine the relative toxicity of different length asbestos fibers in humans would be impossible to derive from this epidemiological data, due to the lack of exposures specifically related to different fiber sizes.

Since human epidemiological data cannot be used to determine the toxicity of small fibers, animal studies are the logical alternative. Animal research to date suggests that long (>5um) asbestos fibers are the most tumorigenic with short (>2.5um) fibers having little tumorigenic effect. These studies, however, are not conclusive and it is not known which asbestos fiber sizes are biologically active for production of the various asbestos-related diseases.

Electron microscopy research that I have conducted on asbestos fiber size distributions from airborn samples collected in the textile, friction, and cement products industries, indicates that it is impossible to accurately predict what percentage of fibers will be less than 5um in length and/or less than 0.25um in diameter and, hence, not counted using the PCM method. I commonly found that the percentage of small fibers in these three industries ranged from 40 to 95 percent with textile manufacturing having the least and cement products manufacturing having the most.

I do not yet have enough EM data from other buildings that I have investigated to determine the percentage of small fibers commonly found in the indoor air. The data that I reviewed from 450 Golden Gate provided little information to further define the fiber size distribution. Very few of the air samples collected were analyzed by an electron microscopy technique that would adequately evaluate or report small fibers. These limited data do suggest, however, that at least 90 percent of the total asbestos fibers found in the building air are small fibers. This is consistent with the asbestos exposure data that I have obtained from other similar buildings.

Whether all of the airborne asbestos fibers are small is not strongly supported by the data I reviewed. I have personally never sampled an occupational environment in which 100 percent of the asbestos fibers present were small. Normally, total airborne asbestos concentrations in buildings are quite low. Assuming 90 to 95 percent of the fibers are small, this leaves only 5 to 10 percent that can be counted using the PCM method. In industrial settings, this does not matter because of the relatively large numbers of fibers. In buildings, however, there may not be enough larger fibers to result in a detectable quantity leading some researchers to suggest that the PCM method may not be appropriate for buildings. The sensitivity of the PCM method has been greatly improved, however, making it still useful as an initial screening technique in buildings. This will be discussed in geater detail in a later section.

### CARPET CONTAMINATION

Air samples collected at 450 Golden Gate have indicated that the carpeting is contaminated with chrysotile asbestos; the same type of asbestos that is in the building's spray-on fireproofing. Because of the varibles involved in the sampling technique, the relative degree of contamination is not possible to determine volumetri-

cally. In addition, there is very little building fabric contamination data available in the scientific literature for comparison.

How this carpet contamination occurred is not apparent from reviewing the air sampling data. Some have speculated that significant fallout occurs through the ceiling exhaust air openings when the ventilation system is off. This is difficult to confirm with air sampling but could be addressed using settled dust sampling technique. Possibly, the carpet contamination is the result of sporadic, short-term fallout situations from maintenance and construction activity and periodic falls of deteriorated fireproofing segments.

Three air samples were collected by GSA and analyzed by EM to determine the possibility of asbestos fiber reentrainment during carpet sweeping (with HEPA Vacuums). This probably represents the "worse case" for potential fiber release and reentrainment. These samples showed that large numbers of asbestos fibers were released from the carpet (up to one foot above carpet) but few made their way into the breathing zone (4 to 6 feet above carpet) and none were found near the ceiling (8 feet above carpet). This suggests that substantial reentrainment of fibers into the breathing zone air did not occur. Of course, three samples do not provide conclusive evidence, but do indicate the necessity for further study.

## EXPOSURE AND HEALTH RISK

Increased health risk resulting from occupational exposure to asbestos has been well documented in the scientific literature. Initially, asbestos was associated w th a chronic and debilitating lung disease called asbestosis which normally occurred following long-term exposures to high levels of asbestos fibers. More recently, asbestos has also been linked to several types of cancer, including mesothelioma (a rare cancer of the chest and abdominal lining) and cancers of the lung, esophagus, stomach, and colon. These cancers usually appear many years after the initial contact with asbestos, and sometimes result from short-term and/or low level exposures. This indicates that there may not be a "safe" level of exposure to asbestos for the elimination of all cancer risk. Additionally, cigarette smoking in combination with asbestos exposure greatly increases the risk of developing lung cancer.

The Occupational Safety and Health Administration (OSHA) standard for asbestos limits exposure to 2 fibers/cc>5um in length averaged over an 8-hour workday with a ceiling concentration of 10 fibers/cc not to be exceeded over a 15-minute period. There is also a provision for the medical monitoring of workers routinely exposed to levels in excess of 0.1 fibers/cc. This exposure standard was devised to minimize the risk of developing asbestosis. OSHA is presently going through the rule-making process to lower this standard. The American Conference of Governmental Industrial Hygienists, an independent scientific body, also recommends chrysotile asbestos exposures be limited to 2 fibers/cc over an 8-hour workday (with the notation that asbestos is a human carcinogen).

NIOSH currently recommends that exposure to asbestos (of all fiber types) in occupational environments be kept to the lowest feasible level that can be reliably determined. This corresponds to 0.1 fibers/cc>5um in length, which is the concentration that can be quantified using the PCM method. Thus recommendation is based on the absence of a threshold dose for asbestos below which no cancers occur. Therefore, NIOSH believes there is no "safe" level of exposure to asbestos for the elimination of all cancer risk. Thus, any exposure results in some increased health risk. A few Federal agencies have developed asbestos exposure criteria specifically for building situations. For example, the Veterans Administration uses an airborne concentration of 0.005 fibers/cc>5um in length (as determined by the PCM method) to determine clearance after any abatement or renovation work. If the concentration is higher than this, the area must be recleaned and resampled.

Additionally, other countries have developed asbestos exposure criteria for these situations. For example, the United Kingdom uses an airborne concentration of 0.01 fibers/cc>5um in length (as determined by the PCM method) to determine clearance.

The sampling data collected to date at 450 Golden Gate, except for the carpet samples, are consistent with my knowledge of similar situations in other buildings. Generally, in normally-used occupied building areas, airborne fiber concentrations are below 0.01 fibers/cc. The exposure results reported above this concentration usually have indicated periodic excursions due to isolated problems (causing increased exposure). Compared to ambient or outdoor concentrations, levels inside buildings are generally an order of magnitude higher. Ambient exposures normally can range from 0.0001 to 0.001 fibers/cc whereas indoor exposures usually range from 0.001 to 0.01 fiber/cc.

The health risk to cancer at these low concentrations is difficult, if not impossible to quantify. Recently the National Academy of Sciences issued a publication, "Asbestiform Fibers: Nonoccupational Health Risks", in which a risk analysis was performed to determine estimates of risk from indoor exposures to asbestos (including chrysotile). One estimate predicted an excess lifetime risk of $64/10^6$ for lung cancer in male smokers exposed to a median asbestos concentration (24-hour average of 0.0004 fibers/cc) and $320/10^6$ for a high asbestos concentration (24-hour average 0.002 fibers/cc). Mesothelioma risks estimates for all worker groups were $9/10^6$ for median asbestos exposure and $46/10^6$ for high asbestos exposures.

### SAMPLING AND ANALYSIS

There are currently a variety of methods available for asbestos analysis. The most widely used methods are: phase contrast microscopy, polarized light/dispersion staining microscopy, scanning electron microscopy, and transmission electron microscopy. Each of these methods can have many variations. Peripheral procedures such as sample collection, transportation, and preparation for analysis are variable but also important. It would not be practical to discuss in detail all of these sampling and analytical techniques, their many variations, and their relative merit. Most of this information can be found in numerous references; however, I have highlighted the more important issues below.

Phase contrast microscopy (PCM) has been the most widely used method for asbestos analysis. As previously mentioned, this method was developed as a practical and economical way to determine an index of "true" asbestos exposure. This method works adequately in occupational settings and most existing asbestos recommendations and standards (as previously discussed) are referenced to this method. To increase the precision of this method, NIOSH has recently modified method P&CAM 239 and has issued method 7400 as its replacement. As with all PCM techniques, the 7400 method cannot identify fibers. Therefore, other fiber types become a serious potential interference when the total number of fibers counted per filter is 10 or less. This is potentially a more common problem in buildings than in industry.

When fiber identification is required, other anlytical methods must be employed. Polarized light microscopy (PLM) and dispersion staining microscopy (DSM) techniques are commonly used to analyze bulk materials for the presence of asbestos. In fact, PLM is the EPA recommended analytical procedure for potential asbestos-containing materials from schools. The use of one or both of these methods to analyze air samples is done by some laboratories, usually qualitatively and normally to supplement the results from other analyses. The use of POM or DSM techniques to identify asbestos on air samples is of very limited utility since only fibers of relatively large diameters ($>1$um) can be readily identified in this manner. In building air, asbestos fibers with diameters $>1$um are rare. Therefore, these two methods can be used to identify only interfering fibers that may be present in buildings (and then, only those non-asbestos fibers $>1$um in diameter). A combined PCM/PLM technique for routinely counting asbestos air samples is used by only a few labs, and then usually on request for specific industrial-type exposure situations. The use of this particular method on air samples from 450 Golden Gate that exceed a concentration of 0.1 fibers/cc has been the subject of much debate. Considering the very small number of airborne fibers (of any kind) having diameters $>1$um that will be collected on samples in buildings, I would consider this method to have virtually no utility in this situation. In addition, the PLM technique itself requires a high degree of operator skill and, therefore, subjective error using this method can be quite large. Based on my personal experience with the PLM method, I cannot endorse its use for the analysis of air samples from buildings. In my opinion, the burden of proof concerning the efficacy of this PCM/PLM method lies with the few analytical labs that employ it.

Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) and two other methods that increasingly are used for the analysis of airborne asbestos samples. Generally, SEM is quicker and cheaper, but not as capable as TEM with respect to microscope resolution or fiber identification. By observing fiber morphology and using energy dispersive x-ray analysis (EDXA), an SEM can be used to perform fiber identification in certain situations where the asbestos type encountered is well defined. TEM is generally regarded as the state-of-the-art technique and can be used for fiber identification via morphology, EDXA, and selected area election diffraction (SAED). The TEM method is somewhat slow and expensive. However, it can provide more information than any of the other techniques. As has been done with some previous air samples from 450 Golden Gate, requiring the use of these electron microscopy methods to analyze only fibers $>5$um so that the re-

sults can be compared to an asbestos exposure standard really defeats its purpose. Using TEM, all fibers can be measured and the appropriate size population extracted from the total data for other purposes or comparisons.

Preparation techniques are also important. On low flow, low volume samples, ashing, resuspension, and redeposition should be performed to minimize sample loss. This method destroys fibrous organic material and should not be used if this type of additional information is desired. On air samples of longer duration, a direct transfer technique such as those recommended by NIOSH or EPA should be used.

For a recent and more thorough comparison of commonly used asbestos analytical techniques, I would recommend the two Canadian reports by Dr. E. J. Chatfield, "Measurement of Asbestos Fibre Concentrations In Workplace Atmospheres" and "Measurement of Asbestos Fibre Concentrations In Ambient Atmospheres." A paper by Dr. D. G. Taylor, et. al., "Identification and Counting of Asbestos Fibers" appeared in the February 1984 issue of the American Industrial Hygiene Association Journal and may also be of interest since it contains a comparison of the NIOSH 7400 method with TEM analysis.

### CURRENT BUILDING CONDITION

A brief visual inspection of the fireproofing in several different areas of the building indicated that the material is friable and appeared to be in a deteriorated condition. There also was evidence that the fireproofing had been frequently patched to repair damaged portions. There have also been several falls of large sections of fireproofing recently which indicates a breakdown of the adhesive quantities of the fireproofing material. Water damage has also been reported. These observations are consistent with those of previous researchers concerning this building.

In situations where the fireproofing is damaged or deteriorated, complete removal of the fireproofing material is the only long-term solution. Encapsulants are usually not recommended when the adhesive properties of the fireproofing are poor, as seems to be the case here. Even apparently effective penetrating encapsulants would, therefore, not be the method of choice in this building.

### CURRENT BUILDING OPERATION

After reviewing dozens of different documents concerning past and present GSA procedures, there generally appears to be a lack of continuity in the approach to the asbestos problem at 450 Golden Gate. This is exemplified by the lack of a *single* comprehensive program. Based on my review, it appears that in most cases, the individual parts of a overall program are written but need to be put into a single comprehensive plan that can be easily understood and followed by everyone. Consequently, much of the necessary record-keeping is very poor or non-existent.

The current GSA Region IX asbestos abatement/control procedures that are written and in force seem to be adequate. However, they must be followed to be effective. It has been reported that these procedures are not always followed. Several of these procedures deserve special mention here. The isolation of areas where ceiling tiles are removed is a good and prudent practice considering the condition of the fireproofing. It is probably not necessary to use an isolation procedure when ceiling tiles are not removed. However, this could be evaluated more objectively by additional air sampling during those types of procedures.

The in-house GSA sampling program at 450 Golden Gate is ambitious but seems to lack direction and, therefore, is not producing meaningful results. There is evidence that more training is necessary to prevent the improper collection of samples and to ensure future sample validity and integrity. At present, a statistical analysis of the sample data would be of little value because the vast majority of air sample results have been below the detection limit.

Single-use respirators are not recommended for asbestos even though some are "NIOSH Approved." NIOSH recommends quantitative fit-testing of respirators and single-use respirators do not provide the effective face-to-facepiece seal required for fit-testing.

The 100 percent single pass through ventilation is a good technique to use until the planned HEPA filtration units can be installed. Even though the sampling results were not really conclusive as to the reduction in airborne fiber concentration this technique produced, they suggest a slight improvement.

The HEPA vacuuming of carpeting is also a good technique considering the asbestos contamination found in the carpets. If used and maintained properly, HEPA vacuum systems may be effective in preventing the reentrainment of asbestos fibers.

RECOMMENDATIONS

Based on the review, of the existing data and observations made during my visit, the following recommendations are offered:

1. Discontinue the current practice of requiring a PLM recount of air samples in excess of 0.1 fibers/cc. Since the non-asbestos fiber identities have not been reported, this has done little more than to lower the PCM counts to a value below 0.1 fibers/cc to satisfy a GSA Region IX policy.

2. Request all future PCM counting to conform to NIOSH method 7400 using the "B" counting rules. As previously mentioned, this new method replaces P&CAM 239 and provides better analytical sensitivity. With a 1000 liter air sample (2.5 lpm for approximately 7 hours), the limit of detection (LOD) would be about 0.004 fibers/cc>5um in length and the limit of quantitation (LOQ) would be about 0.02 fibers/cc. Except for 25mm filters, the samples can be collected using existing GSA sampling equipment. I should also note that there is expected to be a transition period while the analytical labs switch to this new 7400 method.

3. Use the concept of lowest feasible level of asbestos exposure to direct building policy. This is consistent with NIOSH's policy regarding the carcinogenicity of asbestos and the lack of a known safe level of exposure. While the NIOSH recommendation of 0.1 fibers/cc may be appropriate (due to technical and analytical reasons) for industrial situations involving asbestos exposures, it is feasible to maintain and monitor asbestos levels at concentrations well below 0.1 fibers/cc in the 450 Golden Gate building. Currently, GSA Region IX uses 0.1 fibers/cc as an action level; I recommend using 0.01 fibers/cc as an action level. This value is about halfway between the LOD and LOQ of the 7400 method using a 1000 L sample and, therefore, would provide an acceptable statistical reliability (±25%) at the 0.01 fiber/cc level. As previously mentioned, this level (0.01 fibers/cc) has already been adopted in the United Kingdom for use in buildings. This action level of 0.01 fibers/cc should apply to all occupied building space and be primarily used to direct control strategies, not determine relative health risk. Workmen in isolation areas will be wearing appropriate respirators and other protective gear per current GSA guidelines to limit their exposures to 0.01 fiber/cc or less. In addition this new action level can also be used for clearance purposes in areas after abatement or renovation activity is completed.

4. Incorporate this action level of 0.01 fibers/cc>5um in length into a more structured routine sampling program and overall surveillance policy. Routine air samples should continue to be collected in the occupied space of the building. The data collected to date by GSA has indicated the need for more consistency in this approach. A number of sampling sites should be selected in each air handling zone to be used for the collection of routine samples. These sites should be selected so that most building and occupant variables can be considered such as occupant density, fireproofing condition, previous abatement or renovation work, and previous water damage. In addition, the placement of the filter sample at these sites should be 4 to 6 feet above the carpeting to approximate the breathing zone of occupants. A 1000 liter sample should be obtained for each sample. At least one sampling site for each air handling zone per floor would be a desirable minimum. These same sites, once selected, should consistently be used for routine sampling to increase the statistical reliability and reproductability of the data. A minimum of 2 samples per day or 10 samples per week should be collected at these sites throughout the building as an initial trial; at least until this number is adequate. A timetable could then be developed so that placement of the samples at the predetermined sites would be scheduled to ensure that all sites are sampled once before beginning the cycle again. These sampling results should be below the 0.01 fibers/cc value. If any samples indicate an exposure above 0.01 fibers/cc, then further action should be initiated to define the cause and direct the subsequent control action.

In addition to these routine samples, air samples should also be collected inside and outside isolation areas during any abatement or renovation activity. These samples should be collected by the contractor conducting the asbestos removal. In any case, the sampling and analysis of these samples should be verified as being adequate by GSA personnel either by on-site review or simultaneous sampling. Air samples collected outside these isolation areas should also be below 0.01 fibers/cc.

The quality and integrity of these routine samples collected by GSA personnel should be ensured by providing additional training in the technical aspects of sample collection. Pump calibrations should be maintained within ±5% of the desired flow rate. All filters should be used "open-face" and oriented in a manner to prevent the collection of settling dust. The equipment should be checked routinely during sampling to prevent sample loss due to malfunction or tampering. In addi-

tion, all technical aspects of the NIOSH 7400 method should be followed. Sampling is just as important as analysis in the evaluation of airborne asbestos exposures.

5. Establish an analytical hierarchy for the air samples collected. All of the air samples should first be counted using the new NIOSH 7400 method. This is essentially a screening procedure and I would expect the majority of samples to be below the 0.01 fibers/cc action level. Samples showing fiber concentrations in excess of 0.01 fibers/cc should be analyzed for fiber identification using EM (either TEM or SEM). If this additional analysis showed asbestos fiber concentrations to be above 0.01 fibers>5um in length, then the cause should be investigated so that corrective action can be taken.

A certain percentage of the routine air samples that are below 0.01 fibers/cc should also be routinely analyzed by TEM. A reasonable number would be 5 percent which corresponds to one every 2 weeks at 10 samples/week. This analysis will provide some additional data: small asbestos fibers can be evaluated if present; samples can conclusively be determined to be non-detectable for asbestos; the efficacy of the 7400 PCM method as a screening technique can be proven to everyone's satisfaction; and other interfering fibers can be identified and reported. The samples for PCM this analysis should be selected randomly to prevent bias. After a time, the percentage of samples analyzed by TEM can be adjusted as necessary. For example, this percentage could be lowered if all TEM analysis resulted in non-detectable results.

All air samples collected routinely and outside an isolation area that are above the 0.01 fiber/cc level should be additionally analyzed by EM (either TEM or SEM). In my opinion, TEM is the method of choice. However, for lower cost and faster turn-around (in the case of an abatement job for example) SEM is adequate. TEM analysis should include EDXA and SAED components for positive fiber identification. SEM analysis should include EDXA for tentative fiber identification. A direct-transfer technique for air samples, such as the EPA or NIOSH methods is preferred for TEM preparation. If asbestos fiber concentrations are found to exceed 0.01 fiber/cc>5um in length, then the cause should be found and controlled.

6. Specialized environmental sampling can also be incorporated into an overall approach to address specific questions or concerns. Wipe sampling can be used to evaluate surface contamination so efficacy of cleaning techniques can be addressed. Settled dust sampling can be used to evaluate short or long-term fallout of asbestos under normal and worst-case situations (such as through ceiling exhaust grilles). Also, air sampling can be taken during carpet vacuuming to more thoroughly study potential fiber reentrainment.

7. Develop a comprehensive program to deal with the asbestos problem in its entirety and enforce it. I have reviewed many separate documents that deal with a portion of the asbestos situation, including: abatement, renovation, maintenance, cleaning, and respirator use. In general, these individual procedural documents are adequate; however, they need to be pulled together into a single comprehensive program. A GSA Region 9 asbestos guide is currently being developed that is intending to incorporate all of these individual parts. This may be adequate as a comprehensive program. Unfortunately, it was not yet finalized during my visit so I was not able to review a final version of this guide. A comprehensive asbestos program should be made available to all the GSA personnel and building occupants. A protocol should be developed for training and notification to ensure that everyone understands the program and their role in it. This must be a group effort to be effective.

8. Give one person the authority to administer the comprehensive asbestos program for the Region. There seems to have been a lack of continuity in the past concerning the asbestos policies and procedures, probably because many different people have authority over different parts of the program. This may have resulted in the piecemeal approach to the problem. This individual should conduct the necessary training for employees and occupants, perform inspections, oversee sample collection, interpret results and compile periodic updates or reports, evaluate contractors' on-site procedures, keep necessary records, perform other pertinent duties, and periodically evaluate and modify the program as necessary. The 450 Golden Gate Building asbestos coordinator should report to the Regional Asbestos Program Coordinator. The building coordinator should be responsible for the daily activities like sample collection, ensuring sample integrity, sample recordkeeping, oversee cleaning and vacuum cleaner maintenance, oversee the personal protective equipment and monitor its use, closely monitor ongoing maintenance, abatement, or renovation work to ensure that the proper procedures are being followed. The building coordinator position has already been established at 450 Golden Gate. Similar positions can be established in other buildings within Region IX that have asbestos-containing fireproofing. For a comprehensive program to be effective, it must be enforced after the program is in place which can best be accomplished at the building level.

9. Revise the outdated pieces of the comprehensive program to incorporate the wealth of technical information and recommendations that have been generated for 450 Golden Gate over the past several years. The respirator policy written in 1976 is in the most urgent need of revision. Among other things, this policy should require prior medical certification of fitness for all GSA and contractor employees required to wear respirators. In addition, quantitative fit-testing of respirators should be required. As previously mentioned, single-use respirators are not recommended and should not be used. The complete respirator policy should conform in all respects to the OSHA requirements as specified in 29 CFR 1910.134. The revision of this and other outdated policies could best be accomplished during the preparation of the comprehensive asbestos program.

10. Record-keeping for a comprehensive asbestos program needs to be improved. Better records must be kept for sampling and analysis data. The raw GSA data that I reviewed was very difficult to interpret; in some cases impossible. Standardized sample data forms with a column for analytical results would correct this. It is important that the sampling data be interpretable for future statistical evaluation and reference. Other records should be organized and maintained routinely as part of the comprehensive asbestos program. These records could include respirator fit tests, employee exposure and medical exam records, statistical analysis of sampling data, the OSHA log, and other pertinent documentation. It is extremely important that all facets of this program be documented and that this information be kept for some time after the complete removal of the asbestos fireproofing.

11. Continue to operate the mechanical systems so that 100 percent of the return air is exhausted until the HEPA filters can be installed. This minimizes the potential for occupant exposure to airborne asbestos in the event of fireproofing damage. Once the HEPA filters are in place, the routine sampling program should monitor their efficacy.

12. Continue the practice of sealing removed carpeting in double-strength plastic bags. The carpeting should be treated as asbestos-contaminated and disposed of in a sanitary landfill per EPA regulations for material containing <1% asbestos by weight.

13. Develop a maintenance plan for the HEPA vacuum cleaners. These vacuum cleaners are somewhat sophisticated and need to be well maintained to work properly. The filter bag integrity is probably the most important feature. If this bag is ruptured, serious airborne asbestos contamination could occur during use. The manufacturer's recommendation should be followed in maintaining these units. Also, the bags should be treated as asbestos-contaminated sealed in double-strength plastic bags, and disposed of in a sanitary landfill per EPA regulations as previously discussed.

14. Only wet cleaning techniques should be used in the building. Damp mopping and wiping will effectively reduce the potential for reentrainment that could occur with the corresponding dry techniques.

15. Except in cases of absolute necessity, all physical contact with the existing asbestos-containing fireproofing should be eliminated. This includes the removal of ceiling tiles. This wiil decrease the likelihood of future exposure incidents and subsequent contamination. When the fireproofing must be contracted or ceiling tiles removed, area isolation procedures should be in effect.

In addition to the previous specific recommendations, all policies and procedures should meet the OSHA asbestos regulations as specified in 29 CFR 1910.1001.

This letter turned out to be longer than I had hoped. This was necessary, however, to thoroughly address the many concerns about the asbestos situation at 450 Golden Gate and my review of it. Much of the technical content of this letter has been discussed in previous reports and letters to (or available to) GSA Region 9 Personnel. Some of my recommendations have been made in some prior form either in a report or letter. Some of my recommendations are already in effect but were reiterated here. I hope by presenting the discussion of my results as I have in this letter, the concerns about the asbestos problem at the 450 Golden Gate building have all been clearly addressed. Obviously, the sooner the asbestos fireproofing can be completely removed from the 450 Golden Gate building, the sooner the concerns and recomendations discussed in this letter can be dispensed with.

Although the discussion and recommendations made in this letter are specific for the 450 Golden Gate building and GSA Region 9, they may be generally applicable to any building with similar sprayed-on asbestos fireproofing.

If there are any questions concerning this correspondence or if I can be of further assistance concerning this problem, please contact me at (513) 684-4464.

Sincerely yours,

DAWN THARR.

Mr. YOUNG. Our next witness would be Mr. Gene Brewer, president of the National Institute of Building Sciences, accompanied by, Mr. Wayne Ellis, former chairman, National Institute of Building Sciences.

The full text of your prepared statement and your task force report will appear in the record at this point.

[The statement referred to follows:]

STATEMENT BY WAYNE P. ELLIS, ON BEHALF OF THE NATIONAL INSTITUTE OF BUILDING SCIENCES

Mr. Chairman, members of the subcommittee, my name is Wayne P. Ellis. With me are Gene C. Brewer, President, and Steven L. Biegel, AIA, Vice President of the National Institute of Building Sciences (NIBS). I am senior standards consultant to the H.B. Fuller Company of St. Paul, Minnesota. My responsibilities there include the monitoring of all design and construction standards and regulatory developments that may impact our company. I am a past chairman of the board of the American Society for Testing and Materials (ASTM), and a long time member of ASTM committee E-5 on Fire Standards, as well as a member of the ASTM E-6 Committee on Performance of Building Constructions. Earlier this year I chaired a select Task Force on Asbestos in schools and Public Buildings organized and administered by NIBS. My appearance before you today is on behalf of NIBS and I am pleased to have this opportunity to explain the Institute's concern for asbestos standards and regulations.

The Institute was authorized by Congress in 1974 to provide an authoritative source of finding and advice to the public and private sectors on matters relating to building codes, standards, and new technology (Sec. 809, P.L. 93-383). In this capacity, we have provided consensus based recommendations on difficult technical matters that impact the building community. Key to the Institute's ability to arrive at appropriate recommendations is the interplay of public interest advocacy on postions with hard scientific fact and other technical data of a non-political nature. In addressing complex problems NIBS endeavors to arrive at solutions that are both in the public interest and reflect the expressed views of the design and construction community as represented by architects, engineers, planners, product manufacturers, distributors, academicians, labor, builders, code officials, government agencies, building owners/users, and consumers.

Earlier this year, NIBS convened a broadly representative Task Force to study and respond to a notice of proposed rulemaking issued by the Environmental Protection Agency (EPA) on new standards initiatives relating to the asbestos in schools program. After 60 days of effort, the Institute filed a report and published a document entitled "Asbestos in Schools ad Public Buildings". This report summarizes the building communities' view of the asbestos problem and clearly depicts the differing data being used by scientific and medical institutions to justify their positions on the hazards associated with asbestos. I would ask that the NIBS' report, dated July 2, 1984, be made part of this official hearing record.

With all of the emotional debate surrounding the asbestos issue, few groups seem to be taking a rational, exploratory approach toward considering the actual health hazards as they relate to asbestos exposures in buildings. I believe the NIBS Task Force has taken such an approach and we are convinced that our findings are well considered and accurate. We conclude that: The magnitude of health risks from asbestos exposure in schools and public and commercial buildings is not defined, current building science cannot be used to accurately and completely assess the hazards, and standards for gathering the necessary data with which to assess the degree of hazard are incomplete.

These findings should be important to this Subcommittee and we would like to underscore the fact that our conclusions were arrived at by a broadly representative Task Force and a consensus was reached on the need to move cautiously toward standards for asbestos abatement and removal. The key concern is that risk assessment and risk management strategies are virtually absent on the asbestos problem. Another concern we have is that poor use has been made of the enormous amount of research and development that has gone into asbestos guidelines and standards over the years, public and private. Many existing standards and specifications for asbestos removal have been tested and proven by private groups and other federal agencies. It seems wasteful for EPA to launch into a new standards development mode without regard for what has gone before.

The Institute is engaged in discussions with EPA staff on the need for building community participation in EPA plans for developing standards and administering the recently funded grants program. Four tasks identified by NIBS need to be performed if EPA is to benefit from expertise and data existing in the private sector. These tasks include: Periodic reviews by a NIBS Project Committee of EPA progress on asbestos abatement and removal standards and guidelines. This will involve a committee of experts, assembled by NIBS, who are knowledgeable in asbestos hazard mitigation and asbestos hazard risk assessment. The intended meeting between the NIBS committee and EPA staff would permit open exchange of information and two way dialogue between the public and private sectors on a technical basis. Review of EPA work-in-progress on asbestos research and asbestos regulation is considered a high priority by the Institute's Consultative Council and Board.

Written reports prepared by NIBS summarizing the building community's reaction to EPA work in progress. For the record, expert views on the practicality of EPA's guidelines for controlling friable asbestos-containing materials in buildings will be documented by NIBS and transmitted to EPA for review.

Written reports prepared by NIBS on private sector standards development activity and their potential use to satisfy EPA's legislative requirements. Consistent with policies established by the Office of Management and Budget in OMB Circular A-119, the federal government is encouraged to rely upon existing, privately developed, voluntary consensus standards when they exist. With many private organizations involved with asbestos hazard mitigation in buildings, many privately developed consensus standards already exist. NIBS will review and document these efforts, in summary form, and provide EPA with recommendations as to the applicability of such standards for the EPA asbestos grants to schools program.

Final reporting to EPA Administrator and Members of Congress, this task will report the progress of EPA's work, as viewed by the building community, to key members of Congress and agency officials.

These four tasks are in keeping with our July 2, 1984, report wherein we encouraged EPA to conduct its future deliberations with input from as many knowledgeable, interested, and affected parties as can be identified. The nature of such interaction should also be an integral part of the process for dealing with asbestos at the local level. Such an approach will reduce the current level of hysteria being experienced by many concerned but inadequately informed individuals.

Mr. Chairman, the Institute stands ready to assist this Subcommittee and EPA through its unique ability to convene appropriate expertise and advise on important building science issues. My colleagues and I are committed to seeing the asbestos problem dealt with in a scientific and rational way so as to produce lasting solutions that are truly in the public interest. We would be happy to answer any questions you may have.

# Asbestos in Schools and Public Buildings

*Task Force Report*

**July 2, 1984**

National Institute of
BUILDING SCIENCES

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July 2, 1984

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Office of Toxic Substances (TS-793)
Environmental Protection Agency
Room 108
401 M Street, S.W.
Washington, D.C. 20460

RE: OPTS-211012

Gentlemen:

Pursuant to the Environmental Protection Agency (EPA) Response to Citizens' Petition published in 40 CFR Part 763 dated March 7, 1984, the National Institute of Building Sciences (NIBS) is pleased to submit the attached report relative to the Agency's notice of proposed rule-making concerning the abatement of friable asbestos-containing materials in public and private elementary and secondary schools, and the inspection and abatement of these materials in other public and commercial buildings.

The NIBS Board of Directors, with advice from the National Executive Committee of the Institute's Consultative Council, concurs with the findings and recommendations contained in this report. The analysis and summary of the asbestos in schools situation, prepared by a 22-member Task Force, is herewith submitted for inclusion in the official EPA record concerning the above referenced action.

During the development of this report, a major meeting was held over two days (May 24-25, 1984) to ascertain facts about both the health related aspects of asbestos exposure and the practical aspects of asbestos removal and abatement. Proceedings of this meeting, supported by papers and data provided by the presenters, will be made available to EPA upon request.

The Institute wishes to congratulate the EPA for its forthright approach to one of our nation's important concerns, i.e., the quality of the built environment. The NIBS Board also wishes to note with concern that a trend toward regulating building practices without adequate justification has become evident in recent years. Attempting to regulate building practices or the use of specific materials in the face of scientific uncertainty can be a costly and counterproductive undertaking. Devastating consequences could occur if products or entire lines of products were

declared unsuitable for use in buildings, without acceptable substitutes. The asbestos situation is an example of the need for consultation among all parties of interest so that workable solutions can be developed and the public interest served.

On behalf of the many individuals, consumers/users, and organizations that comprise its membership, the Institute appreciates this opportunity to offer its views. In keeping with its Congressional authorization, the Institute is pleased to offer its services to further examine this important matter and stands ready to assist the EPA in any future deliberations.

Thank you for granting the time extension needed to develop our response.

Respectfully submitted,

Rudard A. Jones
Chairman of the Board

Gene Brewer
Gene C. Brewer
President

Enclosures

Acknowledgement

The Board of Directors of the National Institute of Building Sciences wishes to express its sincere appreciation to Mr. Wayne P. Ellis, Chairman of the Task Force on Asbestos in Schools and Public Buildings for his leadership and tireless efforts to achieve a consensus opinion on such a controversial and sensitive issue. The Task Force and its broadly constituted membership are to be congratulated for producing a well organized, authoritative report in response to an Environmental Protection Agency (EPA) proposed rulemaking. The Board also wishes to recognize the concerted efforts of the NIBS staff in managing the 60-day research and data collection tasks on which this report is based.

## INTRODUCTION

The National Institute of Building Sciences (NIBS) was authorized by Congress in 1974 to be an authoritative national source of findings and to advise both the public and private sectors on matters relating to building codes, standards, and technology. (Sec. 809, P.L. 93-383). In this capacity, the Institute has provided consensus based recommendations on difficult technical matters that impact the building community. Key to the Institute's ability to arrive at appropriate recommendations is the interplay of public interest advocacy and positions supported by documented scientific facts and other technical data of a non-political nature. In addressing complex problems, NIBS endeavors to arrive at solutions that are both in the public interest and reflect the views of the building design, construction and building operation community as represented by architects, engineers, planners, product manufacturers, distributors, academicians, labor, builders, code officials, government agencies, building owners/users, and consumers.

On April 13, 1984, NIBS petitioned the Environmental Protection Agency (EPA) for a 60 day extension of the public comment period from April 23, 1984, to June 22, 1984, in order to permit adequate time within which to develop an authoritative response. A return letter from the EPA dated April 25, 1984, stated that, "while we cannot extend the comment period formally, we will consider all comments received while we are conducting these regional meetings". It is with this understanding that NIBS proceeded to develop these

comments and, therefore, considers this to be a timely submittal.

In order to develop a building community response to the proposed rulemaking, NIBS created a Task Force comprised of representatives of the housing and building community and general interest representatives to address building science aspects of this important issue. (See Appendix A for names and affiliations of the NIBS' Task Force members). The key session in the development process was a meeting held on May 24-25, 1984, at which a total of 17 presentations were offered by recognized experts representing diverse disciplines connected with asbestos abatement. The entire session was documented and used as the basis for the Task Force's development of these comments. Those testifying included representatives from federal government agencies (Environmental Protection Agency, Consumer Product Safety Commission, and General Services Administration); academicians from the Mt. Sinai School of Medicine, Johns Hopkins University, and the University of California at Berkeley; organized labor, including the Service Employees International Union (SEIU) whose petition initiated the EPA proceeding; concerned organizations such as the American Hospital Association and the Association of Physical Plant Administrators of Universities and Colleges; and various interested industry groups. (See Appendix B for names and affiliations of presenters).

TASK FORCE REPORT

The Task Force finds that one of the most important issues to the building community is the need for consistency in approach as regulatory bodies and other participants become involved with establishing guidelines, standards and/or regulations for addressing the asbestos situation. For example, airborne asbestos fiber concentration levels and related test methods established by the EPA, for indoor environments, must be comparable to those established by OSHA for workplace environments.

It is further suggested that the EPA will be confronted with legal and practical problems if it does not acknowledge the variety of factors that make buildings unique as well as the variety of individuals who operate and occupy them. Thus, the EPA is encouraged to conduct its future deliberations on this issue with input from as many knowledgeable, interested, and affected parties as can be identified (the consumer/user sector included); a process similar to that used by NIBS to develop these comments. The nature of such interaction should also be an integral part of the process for addressing the asbestos situation at the local level. Such an approach would likely reduce the current level of hysteria being experienced by some concerned but uninformed individuals.

Early in the process, the NIBS' Task Force agreed to establish as the scope of its evaluation the four specific points of the SEIU petition as enumerated in the previously cited Federal Register notice. The Task Force evaluation and recommendations on the various

issues covered by the petition are presented below in a format consistent with the original SEIU petition.

SEIU Petition - Point No. 1

- Establish standards for determining when friable asbestos-containing materials in schools are hazardous.

The NIBS Task Force agrees that the establishment of standards is necessary as existing standards appear to be incomplete or inadequate, although many such standards are currently under consideration for revision or update by many standards groups. This need is derived from the fact that most people spend up to 90% of their time, on a daily basis within buildings, including schools and other structures. Control of indoor air quality is therefore a serious matter and one that must be thoroughly understood. However, not withstanding the broader subject of indoor air quality, the proposed rulemaking, which addresses subjects such as asbestos fibers suspended in the air and the actual abatement and removal of friable asbestos, has been the focus of the NIBS Task Force effort. (See Note 1).

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Note 1: The Task Force recognizes that a complete study of overall indoor air quality would not attempt to precisely segregate the effects of one of its pollutants at the expense of the others, as asbestos fiber suspension is only one of many contributors to indoor air quality. The decision to restrict the scope in the manner described was derived from the desire to define a task that could be managed with the available resources. Serious concern remains that the overall indoor air quality problem is synergistic and that asbestos may or may not be the most serious contaminant present in a particular space.

First, standards for visual inspection of the building's components and systems are necessary to minimize the possibility that affected building areas are overlooked. Such standards should include, at a minimum, the eight "factors noted in visual inspections" presented in Chapter 10 of the "Report of The Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario" and that are quoted verbatim as follows:

"(i) Condition of material: If material is deteriorating, coming loose, or if pieces are falling off, the possibility of fibre release is increased.

(ii) Water damage: If water is leaking onto the material, it can cause rapid deterioration leading to fibre release.

(iii) Exposed surface area: The greater the exposed surface area of the material, the greater the likelihood that any released fibres will reach people working nearby. While a suspended ceiling may cause material to be classified as non-exposed, it should be appreciated that maintenance workers above the suspended ceiling are not protected by the enclosure.

(iv) Accessibility: If the material can be reached by workers or occupants, it is potentially subject to accidental or intentional damage which may release fibres.

(v) Activity and movement: Air movement or building vibration can cause fibre release, while the movement of people or vehicles on the floor can stir up fibres that have settled. Cleaning by dry methods causes particularly high airborne fibre levels.

(vi) Air plenum or direct air stream: If friable material is

enclosed within an air plenum, any fibre release which may occur is more likely to be distributed throughout the building than if the material is not enclosed within the ventilating system.

(vii) Friability: The more friable the material, the greater the potential for asbestos fibre release. Some wet-applied asbestos-containing materials can be quite hard and release very few fibres under most conditions.

(viii) Asbestos content: The higher the asbestos content in the material, the greater the number of asbestos fibres released under any given condition."

Second, there is a need for standards to identify and distinguish the different types of asbestos from one another. Some medical experts suggest that there may be different health hazards associated with different types of asbestos. However, other medical experts believe there are no differences in health effects. (See Note 2). This dictates the need to distinguish among the fiber forms. Studies of workers have shown that some types of asbestos, most notably chrysotile, may be significantly less hazardous than other types, such as crocidolite. (See Note 3). This difference is especially

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Note 2: Per presentations of Dr. Paul Wheeler, Johns Hopkins University, and Dr. William Nicholson, Mt. Sinai School of Medicine, respectively.

Note 3: "Report of The Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario", Chapter 5.

pronounced for diseases such as mesothelioma. Distinguishing among fiber types may be complicated by the fact that geologists have defined asbestos much differently than the building or medical communities. As expert medical testimony submitted to NIBS suggests the difference in health risks from different fiber types, it is important that EPA distinguish among fiber types in setting standards that can be used to identify the relative hazards presented at specific sites. In that the medical community also disputes the health hazard posed by various asbestos types, agreement needs to be reached on which types are hazardous and what standards need to exist for identification.

Moreover, it is apparent that establishment of a baseline of definitions for "friable" and "potentially friable" asbestos is essential. The current EPA definition of "friable" asbestos is "any asbestos material that can be pulverized by finger crumbling." This definition is not scientifically based and can lead to misleading conclusions. Other government definitions go further and become more specific. For example, the Department of Defense (DOD) defines asbestos as "chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite." To DOD, the term "friable asbestos" means "any material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry". Although similar, current government terminology and definitions of friable asbestos are clearly different. These definitions have existed for some time and, although inconsistent, they are widely accepted by federal agencies as appropriate indications

that a potential hazard exists. However, the NIBS Task Force believes that further study and the establishment of test methodology as the basis for definitions are in order. The same is true for such terms as "abatement" and "assessable".

The NIBS Task Force does not believe that the mere presence of asbestos-containing materials in a building constitutes a hazard requiring immediate abatement, but requires instead a systematic approach to assessing the situation.

The NIBS Task Force agrees that the case in which asbestos material is progressively delaminating from the building's components resulting in visible deposits of asbestos on horizontal surfaces within occupied spaces is a situation appropriately requiring immediate containment or removal. However, cases in which the asbestos contribution to the quality of the indoor environment are inadequately defined are much more difficult to evaluate, especially considering the lack of recognized standards, procedures and overall technology, with which to approach the matter. (See Note 4).

The NIBS Task Force strongly urges that the EPA algorithm, which is felt by many to be inadequate in its current form, is the type of procedure that could be used as the basis for a more comprehensive asbestos hazard assessment tool. Data presented as the basis for

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Note 4: The term "standards" is used throughout these comments to describe test methods, test protocols, recommended practices, guidelines, specifications, risk assessment models, etc. as developed by appppropriate authoritative bodies.

assessing an asbestos hazard should consider and document the building's in-use condition, including knowledge of actual ventilation rates and the synergistic effects of other indoor pollutants. The Task Force is not aware that the determination of ventilation rates is a part of the EPA's current assessment tool and, therefore, strongly suggests such determinations be included in further analysis methodologies. Standards are necessary to establish benchmark conditions under which such data are gathered to achieve uniformity of sampling and comparability of results. The Task Force suggests that it would then be possible to establish an overall asbestos air concentration threshold level that, when exceeded, would be considered a risk factor to the building's occupants. Such data would be but one part of a hazard assessment model that would determine the potential for peak and average asbestos air concentrations.

A comparative risk scenario is important for use by building owners and managers, simply presented, to relate the asbestos hazard situation to other types of risks. Building administrators may then understand the risk from asbestos in relation to other more familiar risks and be able to make informed decisions on how best to utilize their limited resources. To illustrate comparative risks reviewed by the Task Force, the following is a table from Chapter 9 of the Canadian Royal Commission Report. Related to this, an evaluation of the different populations at risk in a given occupancy classification as compared to those of other occupancies is necessary. For example, in schools, clearly the students and teachers have a different exposure level than that of janitorial/maintenance workers

Table 9.5

Risks of Death by Cause -- 1980
(Death rate per 100,000 population/year)

| Cause of Fatality | |
|---|---|
| Accidents[a] | |
| Motor vehicles (traffic) | 22.5 |
| Falls | 7.7 |
| Drowning | 3.4 |
| Miscellaneous | 2.9 |
| Fire | 3.1 |
| Poisoning | 1.9 |
| Suffocation | 2.2 |
| Aircraft | 0.7 |
| Motor vehicles (non-traffic) | 0.6 |
| Firearms | 0.3 |
| Disease[b] | |
| Cardiovascular diseases | 337.2 |
| Cancer | 185.3 |
| Pneumonia | 19.7 |
| Diabetes | 12.0 |
| Asbestos Disease from Building Exposure | |
| U.K. Advisory Committee on Asbestos (50 years)[c] | 0.007-0.24 |
| Royal Commission on Asbestos Estimate (10 years) | 0.029 |

SOURCES: [a]Canada Safety Council, *Accident Fatalities, Canada 1980* (Ottawa: The Council, 1982). Table 2, p. 5.
[b]Ibid., Table 19, p. 24.
[c]Adapted from: U.K., Advisory Committee on Asbestos, *Asbestos -- Volume I: Final Report of the Advisory Committee* (London: Her Majesty's Stationery Office, 1979). Table 22, p. 62.

which, in turn, is a different exposure level than that of asbestos abatement workers. In any case, risk assessment standards need to be developed with a cognizance of the wide range of assumptions that can be assigned to each of their separate components in order to achieve consistent application and interpretation of results and should be based upon several models that already appear in the literature. (See Note 5). The EPA should also consider structuring a risk reduction/cost assessment model based on the principles of life-cycle costing, including input from the building user groups

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Note 5: The NIBS Task Force encourages the EPA to carefully study the issue of the distinction between a given level of exposure to asbestos and the ultimate level of risk from such exposure. As is evidenced by the school example above, exposure and risk are neither synonymous nor directly proportionate.

and the medical communities.

The NIBS Task Force finds that, 1) because the magnitude of health risks from asbestos exposure in buildings is not defined, 2) because current building science knowledge and methods cannot accurately and completely assess the situation, and 3) because standards for gathering the necessary data for assessing the degree of hazard are incomplete, it is necessary for the EPA to support the development of specific standards for determining when friable asbestos-containing materials in schools are hazardous. The Task Force also feels that the private sector voluntary consensus standard writing bodies should be encouraged to take the lead in developing the required standards, with federal participation as provided in OMB Circular A-119, with appropriate technical support.

The Task Force concludes from this that precipitous action by EPA to require broadly the removal of asbestos in public buildings is unsupported and potentially hazardous to the populations involved.

SEIU Petition - Point No. 2

- Establish requirements for corrective action when friable asbestos-containing materials are determined to be hazardous.

The NIBS Task Force suggests that any establishment of requirements for corrective action take advantage of the documented abatement experiences that already exist. For example, the General Services Administration, New York City, California and Canadian experiences are all well documented. Accordingly, it would be best to draw

upon the record of past abatement experiences, at the local level, to avoid future mistakes that could lead to unintended contamination of a building.

A wide variety of asbestos uses in buildings over the years has resulted in the need to evaluate the material's current status in each building (and perhaps within each occupied space), on an individual basis, to determine the peculiarities that apply to each area and each product. With several generations of users likely, the need for abatement may not have been warranted at some stage of the building's life, but later determined to be a proper and cost effective action. The most appropriate corrective action (from doing nothing to complete removal) will thus be dependent upon each individual set of conditions. Every building is unique and materials found to contain asbestos within a particular building will be in various stages of disrepair (See Note 6).

It would seem inappropriate for the EPA to establish and impose the adoption of specific blanket requirements for corrective action without knowledge of the individual circumstances of a given building, a situation that can best be assessed by a local authority. However,

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Note 6: An example of one such "unique" building is a hospital which, by necessity, must operate around the clock with virtually sterile air quality. Such a case dictates that requirements for corrective action relative to asbestos be chosen and administered only after careful evaluation, deliberation and planning has been performed so as not to unnecessarily endanger the health of occupants.

under emergency conditions, it may be appropriate for the EPA to establish guidelines for local authorities to take corrective action when specific data is available. The bottom-line, then, is the need for a national process that will work at the local level.

SEIU Petition - Point No. 3

- Establish requirements for inspection and abatement of friable asbestos-containing materials in public and commercial buildings.

The NIBS Task Force finds that EPA's proposed expansion into the area of establishing requirements for inspection of public and commercial buildings is appropriate as long as it is approached with appropriate assessment techniques. Those techniques should accommodate differences in construction details associated with these occupancies as well as their different occupant classifications and usage patterns. Such an application would help to ensure that an orderly and rational process is brought to the inspection of the asbestos situation in these buildings.

One avenue that has not been explored for conducting inspections is that of state and local building code and public health authorities. We suggest that, as a matter of public health and safety, the inspections for asbestos material may be within the jurisdiction of state and local building code and public health officials. In addition, they should be encouraged to work in conjunction with the local building design and engineering professions, applying nationally recognized uniform standards to guide their respective

actions. It is also important that a system of instruction and certification be established to assure competence among individuals who profess to be expert in assessing asbestos related hazards.

With respect to abatement, the Task Force finds that it would be premature for the EPA to establish requirements for these occupancy classifications before the technical and economic implications of doing so are thoroughly understood.

SEIU Petition - Point No. 4

- Establish standards for the performance of abatement activities, including standards for the protection of persons performing such activities.

The Task Force suggests that OSHA standards will more appropriately apply to all employees of abatement contractors and building owners whereas EPA standards will be more appropriately applicable to all the other aspects of the abatement process. Standards for the performance of abatement activities are needed, but they should be developed by all interested and affected parties working together with private sector voluntary consensus standards writing bodies.

Throughout the process of developing the NIBS Task Force comments, several instances of abatement work that had not been performed up to expectations were heard and discussed. In fact, it was reported during these deliberations that some poorly performed asbestos removal and abatement work actually led to increased airborne asbestos levels in the building. There were also reports of cases where stable

asbestos was disturbed during abatement resulting in airborne asbestos where it had not been previously. There may be a variety of reasons for the occurrence of these problems, from lack of proper initial training to carelessness and incompetency on the job. Whatever the case, it is clear that poor abatement practices may exacerbate existing conditions rather than solve the problem.

Standards are needed to provide the means by which workers who come in contact with asbestos, and abatement workers themselves, should be trained and the effectiveness of their performance measured. A natural extension of this would be the establishment of training and certification programs at both the organizational and individual levels for workers who come in contact with asbestos. Such programs should be developed and administered by organizations recognized as competent by the appropriate authorities. Many private institutions already exist with capabilities in this area.

It must also be recognized that training and certification is not a guarantee of satisfactory performance at the individual asbestos abatement job site. The Task Force therefore suggests that, wherever possible, current building official/inspection organizations, public health officials and design professionals at the state or local level should be engaged to provide timely and appropriate oversight of abatement work. Code officials and inspectors already perform many similar routine building inspection and enforcement activities.

Standards for the protection of persons performing abatement activities are also necessary and, again, should be developed by a joint effort of all knowledgeable, interested, and affected parties.

In conclusion, the NIBS' Task Force finds that:

- the magnitude of health risks from asbestos exposure in schools and public and commercial buildings is not defined,
- current building science cannot be used to accurately and completely assess the hazards, and
- standards for gathering the necessary data with which to assess the degree of hazard are incomplete.

Therefore, it would be premature for the EPA to mandate specific asbestos abatement actions at this time, unless accompanied by the type of standards called for throughout this document, except for those cases that call for emergency measures due to extreme degradation of the asbestos-containing materials.

Appendix A

NIBS' Task Force on Asbestos in Schools and Public Buildings

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Appendix B

Revised 5/22/84

AGENDA

NIBS' ASBESTOS TASK FORCE
Washington Plaza-Hotel
May 24-25, 1984

May 24 - Monroe Room

| | |
|---|---|
| 9:30 a.m. | Wayne Ellis, Chairman, NIBS' Asbestos Task Force<br>Gene C. Brewer, President, NIBS |
| 10:00 a.m. | Dave Mayer, Environmental Protection Agency |
| 10:30 a.m. | Dr. William Nicholson, Mt. Sinai School of Medicine |
| 11:00 a.m. | Coffee Break |
| 11:15 a.m. | Dr. Paul S. Wheeler, Johns Hopkins University |
| 11:45 a.m. | Jim Turner, Swankin & Turner |
| 12:15 p.m. | Jim Hardy, Kirkland & Ellis<br>Ontario Commission Report |
| 12:45 p.m. | LUNCH - Jefferson Room |
| 1:30 p.m. | Wayne Tansil, Gobbell Hays Pickering, Inc. |
| 2:00 p.m. | Paul White, Consumer Product Safety Commission |
| 2:30 p.m. | Henry Singer, General Services Administration |
| 3:00 p.m. | Marcel Cossette, Center for Technology, Canada (ASTM) |
| 3:30 p.m. | Paul Knapp, The Association of Physical Plant Administrators of Universities and Colleges |
| 4:00 p.m. | Mary Ficht, American Hospital Association |
| 4:30 p.m. | Discussion |
| 5:00 p.m. | Adjourn |

May 25 - Monroe Room

| | |
|---|---|
| 9:30 a.m. | Wayne Ellis, Chairman |
| 9:45 a.m. | William Borwegen, Service Employees International Union |

Agenda
NIBS' Asbestos Task Force
Washington Plaza-Hotel
May 24-25, 1984
Page Two

| | |
|---|---|
| 10:15 a.m. | Jim Lapping, Building & Construction Trades, AFL-CIO |
| 10:45 a.m. | Ian Stewart, Walter C. McCrone Assoc., Inc. |
| 11:15 a.m. | Coffee Break |
| 11:30 a.m. | John Biechman, BOMA International |
| 12:00 noon | Dr. David Main, West University, Urbana, Illinois |
| 12:30 p.m. | LUNCH - Jefferson Room |
| 1:30 p.m. | Hal Levin, University of California at Berkeley |
| 2:00 p.m. | Discussion |
| 2:30 p.m. | Summary - Wayne Ellis |

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Mr. YOUNG. Please proceed.

**TESTIMONY OF GENE BREWER, PRESIDENT, NATIONAL INSTITUTE OF BUILDING SCIENCES, ACCOMPANIED BY WAYNE ELLIS, FORMER CHAIRMAN, AMERICAN SOCIETY OF TESTING MATERIALS**

Mr. BREWER. Thank you, Mr. Chairman.

With me is Wayne Ellis, one of our many volunteers who chaired an important task force recently. Just a word of background.

The institute submitted a statement to your committee on March 21, which made several recommendations on procedure. Our reason for getting involved in the asbestos situation stems from our legislation, in which the Congress authorized the institute to be a provider of important information and technical data about building codes and standards as well as new technology.

We do that by bringing people together who are experts in their fields, develop consensus recommendations that can go to both the public and private sector. After we made our recommendations to you in March, we undertook to take a look at the advance notice of rulemaking from EPA, and Mr. Wayne Ellis here will tell you how that was done.

He was the chairman of that effort, a volunteer chairman.

Mr. ELLIS. Thank you, Mr. Chairman.

Mr. Ellis did not do it. Mr. Ellis headed a group of knowledgeable experts and representatives of others affected by asbestos in buildings. We convened this broadly representative task group to study and respond to a notice of proposed rulemaking by EPA.

The end product of our studies and discussions was the report which has been filed with you, which is entitled "Asbestos in Schools and Public Buildings," and the conclusions of this report are very clearly stated.

We concluded that the magnitude of health risks from asbestos exposure in schools and public and commercial buildings is not defined, that current building science cannot be used to accurately and completely assesses the hazards, and that standards for gathering the necessary data with which to assess the degree of hazard are incomplete.

Mr. Chairman, I would like to make some supplementary remarks because the balance of this report is in your hands and it certainly accurately states the position of NIBS.

Let me begin by saying that as an industrial chemist I have been familiar for a long time with asbestos both in the laboratory and in manufacturing processes.

I have spent more than 25 years in these pursuits, so I understand what asbestos is. I have a healthy respect for it, but I do not fear it.

One of the aspects of the presence of asbestos in buildings, of course, is the emotions that are aroused when asbestos is identified.

Mr. Welch touched on the Ontario Royal Commission report, which was indeed a most comprehensive study of the situation in Canadian school buildings and other public buildings.

He properly characterized it as warning against untimely removal of asbestos because of the danger of creating more asbestos in

the atmosphere than existed. But I want to emphasize that one of the most important conclusions of the Ontario Royal Commission report was that asbestos in buildings poses an insignificant hazard. This is very important and this statement is confirmed by the remarks made at this table today.

Dr. Melius just pointed out that a certain building under their jurisdiction was confirmed as containing friable asbestos and after inspection it was found it posed no immediate hazards to the occupants.

Other buildings inspections have reported similar observations and results, and the building community in general, which is represented by the National Institute of Building Sciences [NIBS] believes that the hazard to occupants of buildings containing asbestos may be grossly exaggerated.

One of the reasons is that the perils of asbestos, the hazards of asbestos, that are so thoroughly documented in the literature, are based on occupational exposure; that is, workplace hazards, and OSHA has very nicely defined acceptable limits for asbestos exposure in occupational areas.

The proposed OSHA standard I believe is 0.50 fiber of asbestos per cubic centimeter of atmosphere. I was interested in the presentation by the Public Buildings Service people. In their survey of PBS buildings they found that the worst condition based on air monitoring, the highest level of asbestos concentration found in those buildings was 0.09 fiber per cubic centimeter, which is only a fifth of the maximum OSHA permissible concentration.

So I am simply saying that the hysteria that has been generated by the presence of asbestos in buildings probably is not warranted, and if there is something that the building community can do, and others involved in the problem to reduce this hysteria, it would be a great public service.

I think the reason for this hysteria is that the public is not familiar with asbestos. It is an industrial material that is involved in building construction. The public does not come in contact with asbestos in the normal course of living. The public is aware of hazards from automobile accidents, from smoking, from a variety of risks that human beings are exposed to every day, and each member of the public makes his own risk assessment as to whether he will ride in an automobile or smoke a cigarette, but the average citizen has no basis for making that determination when he is told that there is asbestos in a building that he occupies.

In the remarks that EPA made this morning, I noted that there was no discussion of the apparently new philosophy in EPA of risk assessment.

Mr. Ruckelshaus has stated on several occasions that risk has to be divided into two parts, risk assessment and risk management. Risk assessment is the area of the scientist. The scientist determines, based on the facts that he finds in a particular building, what the risk is from asbestos materials in that building. After that risk assessment is made, it is necessary for someone else to determine how that risk shall be managed for that particular building, for that series of buildings, or for that particular Government department. So the risk assessment process is primarily a scientific and technical endeavor. Risk management, on the other

hand, is a sociopolitical endeavor, and those two things ought to be considered separately, and not mixed up as is so often done in the current discussions about asbestos in buildings.

One of the things that amazes me about this whole discussion is the question of who shall regulate the asbestos in buildings. We seem to be ignoring the existence of a well-organized and in-place regulatory system, namely the buildings regulatory system of the United States.

Every community having a substantial building inventory is governed by a building code authority, a regulatory authority set up by local ordinance or local law.

Building code regulatory officials have the responsibility to administer the local building codes. To that end, they have building inspectors. They have building laws and regulations. They have qualified people who can do this.

It is incomprehensible to me, Mr. Chairman, that we would expect the U.S. Environmental Protection Agency to perform this function regarding the presence of asbestos in buildings, when a competent regulatory system already exists.

That is one of the reasons why, in the NIBS report of July 2 we suggested that the normal building regulatory process in the United States be used for the purposes of risk assessment and risk management in private sector buildings.

We recognize, of course, that it is the function of GSA and EPA and other Government agencies to be responsible for their own buildings. When you think of extending this authority to all of the private buildings in the United States, it becomes a staggering undertaking and the cost of doing so, I think, would make it prohibitive.

Another point that has been touched on this morning is the lack of standards. NIBS agrees with the position of several of the members of this subcommittee who questioned what standards exist and what is the need for standards.

In our report we identify the fact that standards are needed in several areas. Standards are needed for risk assessment of specific buildings, to determine what, if any asbestos exists what condition it is in, and whether or not it needs to be removed.

Standards are needed for the qualification, the training and certification of inspectors for asbestos, and this too can be done in the private sector.

We also need specific standards to protect the health and the welfare of workers who are engaged in removing asbestos.

Some standards do exist in various forms, but not in any rational, coherent set of standards, and we believe, Mr. Chairman, that such a set of standards could be prepared jointly by Government agencies and by the private sector as contemplated by OMB Circular A-119.

You may have noted, Mr. Chairman, the program states that I am a former Chairman of ASTM. You may not be familiar with ASTM, the American Society for Testing and Materials. I am not testifying here on behalf of ASTM; but rather on behalf of NIBS. However, ASTM strongly supports NIBS activities and participates in its mission to rationalize the building regulatory process.

That is about all I want to say, Mr. Chairman. I am sorry I have taken so much time, and I will try to answer any questions you have.

Mr. YOUNG. Thank you, Mr. Brewer, do you have any further comments?

Mr. BREWER. Just to answer questions.

Mr. YOUNG. Thank you very much.

We will move along, then we will get to the questions.

Mr. Ray Kammer, Deputy Director of the National Bureau of Standards.

Mr. Kammer, the full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

STATEMENT OF RAYMOND G. KAMMER, DEPUTY DIRECTOR, NATIONAL BUREAU OF STANDARDS, U.S. DEPARTMENT OF COMMERCE

Mr. Chairman and members of the subcommittee, I am Raymond G. Kammer, Deputy Director of the National Bureau of Standards (NBS), and I am here to summarize the current state of measurement technology for asbestos mineral forms and some options in abatement or containment procedures which would contribute to the reduction of potential hazards for the occupants of public buildings. With me are Dr. Dale Newbury, Group Leader of Microanalysis Research in the Gas and Particulate Science Division, Center for Analytical Chemistry and Dr. Richard N. Wright, Director, Center for Building Technology.

The National Bureau of Standards is the Nation's central physical sciences, measurement, engineering and standards laboratory. The two parts of NBS that provide measurement services that are pertinent to reliable asbestos monitoring are the Center for Building Technology which develops techologies to predict, measure and test the physical performance of building materials, components, systems and practices; and the Center for Analytical Chemistry which provides the Nation with the basis for uniform chemical measurements through the development of accurate measurement methodology and standards and the provision of measurement services in the field of analytical chemistry. The latter Center also serves as a National reference laboratory through the development, analytical certification, and issuance of Standard Reference Materials (SRM's). NBS does not promulgate or enforce regulatory standards, but does provide technical support to private and public organizations that have these responsibilities. NBS does not possess medical or health expertise and cannot speak to the potential health hazards associated with the use of asbestos-containing materials in buildings.

During the past seven years, the Center for Analytical Chemistry of the National Bureau of Standards has been working with the Environmental Protection Agency (EPA) to develop improved measurement methodologies and reference materials for the analysis of asbestos from ambient at atmospheres. These methods and reference materials are important components of quality assurance programs to assess the validity of data from large monitoring programs. The following is a brief comparison of the current analytical methods used to determine asbestos, and the areas where each method is best suited for use. In my previous testimony before this Committee on March 21, 1984, I described each method in some detail.

There are currently two general types of techniques used for the microscopic analysis of asbestos fibers. These techniques are light microscopy, using phase contrast or polarized light; and electron microscopy, using a relatively low energy electron beam (scanning electron microscopy) or a high energy beam (analytical electron microscopy) (AEM).

The optical microscopic methods require relatively inexpensive scientific equipment ($10,000), are less costly to use, and are scientifically sound when analyzing asbestos in asbestos work environments or other areas of high asbestos content.

Phase contrast light microscopy is used by the Occupational Safety and Health Administration, the National Institute of Occupational Safety and Health, and the Mining Safety and Health Administration for determining occupational exposure to airborne asbestos in industrial areas where asbestos is mined, processed, or handled. The phase contrast method is listed in the Federal Register as the technique to use to test for occupational exposure to asbestos (29 CFR 1910.1001). Polarized light mi-

croscopy is recommended by the Environmental Protection Agency for characterizing the asbestos content of "bulk" materials such as building insulation.

The analytical electron microscopic method, using a high energy electron beam, requires an instrument which can exceed $250,000 to purchase and requires skilled scientific operators to conduct analyses, resulting in an analysis cost of between $250 and $1,000 per sample, according to a recent survey. However, the AEM is the only analytical technique that has the image resolution necessary to identify individual asbestos fibers as they are found in typical building environments. As a result of two workshops hosted at NBS, EPA recommends the use of the AEM in its provisional method for asbestos analysis.

Using an improved AEM analytical method developed in the Center for Analytical Chemistry at NBS, we have completed the first Standard Reference Material for use in asbestos analysis by AEM. The reference standard called SRM 1876 Chrysotile Asbestos Fibers consists of four portions of polycarbonate filter (3 mm × 3 mm) that contain asbestos fibers mixed with "urban dust" to represent the material that would be gathered form an ambient air sample. NBS has certified each SRM as containing a known concentration of chrysotile asbestos fibers per unit area with a defined statistical uncertainty. EPA, and state and local agencies involved in asbestos monitoring will use this standard to assess the accuracy of data produced by agency or contract laboratories on large scale monitoring programs.

Let me now turn my attention to abatement programs and control strategies which may be employed when airborne asbestos concentrations are at an unacceptable level. As a measurement agency, we do not have the expertise to comment on medical or toxicological decisions and cannot address the issue of when an unacceptable level of asbestos has been reached. However, when remedial action is required, a number of options exist to enhance asbestos abatement.

The Public Buildings Service (PBS) of the General Services Administration (GSA) asked that the Center for Building Technology, National Bureau of Standards (NBS) develop state-of-the-art guidelines for surveying buildings having asbestos-containing materials and for selecting and applying assessment and abatement options. The work was initiated in October 1981 and the guidelines were completed in May 1983. The "Guidelines for Assessment and Abatement of Asbestos-Containing Materials in Buildings" published as NBSIR 83-2688, are based on available information and include a review of the following: (1) history and use of asbestos-containing materials in buildings; (2) examples of building systems which may affect airborne asbestos fiber levels; (3) related regulations, standards, and guidelines; (4) techniques to evaluate asbestos-containing materials; and (5) abatement techniques. PBS reports that it has issued the guidelines to its regional offices for interim guidance. We understand their use is planned on some 18 asbestos abatement projects.

In previous testimony before this Committee on March 21, 1984, I described these guidelines in some detail. For the convenience of the Committee, let me now briefly summarize them. The selection of an appropriate asbestos abatement solution generally is based on the condition of the asbestos-containing material, its location, the function and occupancy of the work area, and the cost. Approaches to control exposure of asbestos may be either interim or long-term measures.

Interim measures include proper dust control procedures for the custodial staff, maintenance work procedures to limit release of airborne asbestos fibers, periodic surveys, recordkeeping and an educational program.

The long-term control measures discussed in the report include containment and removal methods. Containment methods include encapsulation, coating the asbestos-containing material; and enclosure, placing an impervious barrier between the asbestos and occupied buildings areas. Removal may be accomplished by wet or dry methods. These long-term methods can be used separately or in combination.

Containment of asbestos-containing material by encapsulation or enclosure systems in general takes less time than removing the material and is less expensive, especially if replacement of material can be avoided.

The guidelines provide advice on selecting appropriate long-term abatement techniques. These techniques have cited advantages and disadvantages. The guidelines recommend that each building be evaluated individually to select the most appropriate abatement technique. There is no one strategy that is the best. However, it must be noted that the potential risks associated with removal are high and that this option must be evaluated carefully before being implemented. In many cases steps can be taken to pursue various strategies. No matter which option is chosen a monitoring and measurement program should be adopted to assess the effectiveness. This concludes my prepared statement. I appreciate the opportunity to discuss the NBS work at these hearings and hope that the data presented will be useful to you in your deliberations.

RAYMOND G. KAMMER, JR., DEPUTY DIRECTOR, NATIONAL BUREAU OF STANDARDS

Raymond G. Kammer, Jr., became the Deputy Director of the National Bureau of Standards on September 14, 1980.

NBS is the Nation's central reference laboratory, providing measurement methods, standards, and data that are used in industry, commerce, government, and universities. Bureau headquarters are located in Gaithersburg, Maryland, with a second laboratory at Boulder, Colorado. Total staff numbers about 3,500.

As Deputy Director, Mr. Kammer is responsible for the efficient execution of the Bureau's operational programs. He coordinates, monitors, and assesses progress of all NBS technical projects, and of the supporting services.

Mr. Kammer joined NBS in 1969 as a management intern and program analyst. From 1971 to 1974 he served as program and budget analyst at the Department of Commerce. Returning to NBS as senior budget analyst, he subsequently served as senior program analyst, Associate Director for Programs, Budget, and Finance, and Director of Administrative and Information Systems.

Mr. Kammer received a Bachelor of Arts degree from the University of Maryland in 1969.

Mr. YOUNG. Please proceed.

## TESTIMONY OF RAYMOND G. KAMMER, DEPUTY DIRECTOR, NATIONAL BUREAU OF STANDARDS, ACCOMPANIED BY RICHARD N. WRIGHT, DIRECTOR, CENTER FOR BUILDING TECHNOLOGY AND DALE NEWBERRY, GROUP LEADER, MICROANALYSIS RESEARCH, GAS AND PARTICULATE SCIENCE DIVISION

Mr. KAMMER. Thank you, sir.

With me are Dr. Wright, who is the head of our Center for Building Technology; and Dr. Dale Newberry, who is the leader of one of our technical groups that, among other things, specializes in the measurement of asbestos.

What I would like to do is summarize the current state of measurement technology for asbestos, and some options for the abatement or containment of asbestos in buildings that we have studied.

I will start with a brief comparison of the current analytic methods used to detect asbestos and measure it.

There are two classes of technique used for the measurement of asbestos. One class is called light microscopy and the other class is called electron microscopy.

In the characterization of light microscopy, it includes the fact that it tends to be a cheap method to use, and it is often a scientifically sound method to use when you are analyzing asbestos in work environments or other areas of high asbestos content.

Phase contrast light microscopy is used by OSHA, NIOSH, the Occupational Safety and Health Administration, for determining occupational exposure to airborne asbestos in industrial areas.

The phase contrast method is also listed in the Federal Register as the technique to use for occupational exposure to asbestos.

Polarized light microscopy is recommended by EPA for characterizing the asbestos content of bulk materials such as building insulation.

With respect to electron microscope techniques, the preferred method is analytic electron microscopy. Unfortunately, it is a fairly expensive technique. The instrument costs about a quarter of a million dollars.

It is going to cost approximately $500 to $1,000 to do each sample, and it is time consuming. It requires trained people to do. However, analytical electron microscopy is the only analytic tech-

nique that has the resolution necessary to identify individual asbestos fibers as they are found in particular building environments.

As a result of two workshops hosted at NBS, EPA recommends the use of this for asbestos analysis. We have also devised a measurement technique to accurately calibrate the analytic electron microscope for asbestos measurements.

This technique will be used by EPA and State and local agencies to assess the accuracy of the data they produce in doing monitoring efforts in their areas.

Let me turn to abatement programs and control strategies for asbestos. PBS asked NBS to develop state-of-the-art guidelines for surveying buildings that have asbestos containing materials and for selecting and applying assessment and abatement options.

We started a study for PBS in October 1981 and we finished it in May 1983. The guidelines include the history and use of asbestos containing materials in buildings, examples of building systems which may affect airborne asbestos fiber levels, related regulations, standards and guidelines, techniques to evaluate asbestos containing materials, and abatement techniques.

PBS reports that it has issued the guidelines to its regional officers for interim guidance, and we understand that their use is planned in 18 abatement projects that are underway today.

The selection of an appropriate abatement solution generally is based on the condition of the asbestos containing material, its location, the function and occupancy of the work area, and the cost.

You can also have strategies that are interim or you can have strategies that you hope are going to be long-term measures.

Some of the interim strategies that you might understand today include dust control procedures for the custodial staff, maintenance work procedures, periodic surveys and recordkeeping, and an educational program.

The long-term control measures include containment and removal. Containment methods include encapsulation, which is the coating of asbestos containing material, and enclosure, which is placing an impervious barrier around the asbestos.

Removal may also be a strategy, and that can be accomplished by dry techniques or by wet techniques.

In general, encapsulation or enclosure is going to take less time, and it is going to be cheaper than removal. The guidelines that we presented to PBS recommended that each building be evaluated individually to select the most appropriate abatement technique.

There really isn't any strategy that is going to be the best in every circumstance. However, we noted in our report, and would repeat here that the potential risks associated with removal are high, and that this option must be evaluated carefully before being implemented.

No matter what option is chosen, a monitoring and measurement program should be adopted to assess the effectiveness of the option that is being pursued.

Thank you, sir.

Mr. YOUNG. Thank you very much, Mr. Kammer.

Do Mr. Wright or Mr. Newberry care to make a statement at this point? Thank you.

Mr. John Miles, Director of Field Operations of the Occupational Safety and Health Administration.

Mr. Miles, the full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

STATEMENT OF JOHN B. MILES, JR., DIRECTOR OF FIELD OPERATIONS, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Mr. Chairman and members of the subcommittee, thank you for this opportunity to bring you up to date on the efforts of the Occupational Safety and Health Administration (OSHA) to protect Federal employees from possible asbestos hazards in the workplace. Since the agency's most recent testimony to the Subcommittee on this subject last March, OSHA has proposed a new asbestos standard that would significantly reduce permissible asbestos exposure levels for American workers.

I would like to begin by discussing the extent of OSHA's role in regulating asbestos. The Occupational Safety and Health Act of 1970 (the Act) applies to employment conditions throughout the nation. OSHA's authority extends to private sector employers with one or more employees. The Act authorizes the agency to establish and enforce workplace safety and health standards. The standards are developed through a rulemaking process that allows public comment, public hearings, and an opportunity for review by the Federal courts. In developing standards OSHA must consider the significance of the risk to workers as well as the standard's economic and technological feasibility. OSHA has the authority to conduct workplace inspections to enforce the standards, and also to oversee the operation of State occupational safety and health programs, provide for training and education, and encourage employer-employee cooperative programs to reduce workplace hazards.

OSHA'S JURISDICTION IN THE FEDERAL SECTOR

Under Section 19 of the Act, occupational safety and health responsibilities in the Federal government are assigned to the heads of the Federal agencies, with oversight responsibilities accorded OSHA. Successive Executive Orders, beginning with an Order issued in 1971, have defined OSHA's role and the agencies' safety and health duties in the Federal sector. Currently in effect is Executive Order 12196 of February 26, 1980, which gives OSHA certain new means of promoting workplace safety and health throughout the Federal Government and also establishes new requirements for agency heads in the operation of their occupational safety and health programs. Regulations implementing this order were issued by OSHA in October 1980 (AT 29 CFR Part 1960).

The Order and implementing regulations require that each Federal agency head must operate an occupational safety and health program in compliance with OSHA standards as well as in accordance with the principles and basic program elements set forth therein. Thus, if OSHA revises its asbestos standard, all Federal agencies will be required to comply with the new rule as they have complied with the current standard. Furthermore, Federal agencies themselves must conduct periodic inspections of their workplaces. They must also respond to employee reports of imminent dangers within twenty-four hours and reports of allegedly serious hazards in three working days. Moreover, Executive Order 12196 provides OSHA with the authority to make unannounced inspections in most Federal workplaces. OSHA compliance personnel also respond to requests for technical assistance from Federal agency managers.

OSHA'S JURISDICTION IN THE STATES AND IN THE SCHOOLS

Civilian employees in the Federal government are covered by OSHA as I have just described. Public employees of State and local government, however, are covered in the following manner. In States that have elected to operate their own job safety and health programs, public employees must be afforded protection. This is a requirement of section 18 of the OSHA Act if the State plan is to be approved by the Secretary of Labor. There are now twenty-three states and territories that administer their own Federally approved OSHA programs for private sector employees under section 18 of the Act. Two additional States—Connecticut and New York—have designed their programs to cover only public sector employees; these two States rely on Federal OSHA to administer the program in the private sector. All these "state-plan states" are required to adopt and enforce OSHA's standards or a standard with equivalent protection and have in fact adopted the asbestos standard

or an equivalent rule. In addition to active enforcement programs, the States also provided onsite consultation and other voluntary compliance assistance. The state-plan states have taken an active role in the nationwide effort to eliminate asbestos hazards in public schools, in cooperation with the Environmental Protection Agency (EPA), under the 1980 Asbestos School Hazard Detection and Control Act. For example, during a recent eighteen-month period, the Arizona State OSHA program conducted 25 onsite health consultations in response to requests from public school administrators concerned about asbestos in schools. Alaska, Minnesota, Maryland, Michigan, Washington, Iowa, New York, the Virgin Islands, and Puerto Rico are among the other state-plan states that have active consultative or enforcement programs—or both—to eliminate asbestos hazards in public schools and other public buildings.

Under the provisions of the act, employees of state and local governments, including employees in public schools, are excluded from coverage by Federal OSHA—that is, in the thirty States and jurisdictions where Federal OSHA administers the program. In the Federal OSHA states and jurisdictions, only private school employees come under OSHA's coverage; public school employees in these states are not covered by OSHA's asbestos standard. On the other hand, both public and private school employees in state-plan states are covered by the State's equivalent of OSHA's asbestos standard, which is enforced by the State OSHA program. Since in all instances OSHA's statutory authority extends only to employers and their employees, students in both public and private schools are not covered by OSHA's asbestos standard or any other Federal or state OSHA standard.

### OSHA'S STANDARD FOR ASBESTOS

As I reported to the Subcommittee at its hearing last March, OSHA has long recognized the dangers resulting from occupational exposure to asbestos. The agency's first comprehensive health standard, issued on June 7, 1972, regulated asbestos. This rule, which is the asbestos standard in effect today, initially established a permissible 8-hour exposure limit of five fibers of asbestos per cubic centimeter of air, and later of two fibers, with a maximum ceiling concentration of ten fibers per cubic centimeter at any one time. The 1972 asbestos standard has served in many ways as a model for subsequent health regulations issued by OSHA. It establishes a maximum permissible exposure limit as well as requirements for monitoring, medical surveillance, labels, waste disposal, recordkeeping and change-of-clothing rooms.

On November 4, 1983, OSHA issued an emergency temporary standard which would have immediately lowered the permissible exposure limit for asbestos from two fibers to a half fiber per cubic centimeter of air. This emergency standard, however, was immediately challenged and stayed by the U.S. Court of Appeals for the Fifth Circuit, pending a decision on March 7, 1984, that an emergency rule was not warranted in this instance.

On April 10, 1984, OSHA proposed a revision to its permanent asbestos standard which would reduce the permissible exposure limit, on an 8-hour time-weighted average, to either 0.5 fibers or 0.2 fibers per cubic centimeter (cc.). The final decision on a permissible limit will be made after OSHA officials study evidence provided by the public regarding health risk as well as the technical and economic feasibility of the alternatives. The proposal also addresses issues such as the definition of asbestos fibers, changes in the standard's recordkeeping requirements, modification of the monitoring requirement, the use of regulated areas, and the need for an asbestos action level to trigger certain requirements such as monitoring, medical surveillance, and protective clothing.

During the extensive public hearings held last summer on its asbestos proposal, OSHA received thousands of pages of information from those interested in the rule. (It is worth noting that there was very little comment on the problem of asbestos exposure in office buildings.) The agency is now analyzing the comments received and expects to issue a revised asbestos regulation in the spring of 1985.

### INTERAGENCY COORDINATION

I am aware that this subcommittee is concerned with the degree of coordination among Federal agencies that regulate asbestos. In developing its standard, OSHA consulted with the Environmental Protection Agency (EPA), the National Institute for Occupational Safety and Health (NIOSH), and other agencies with expertise. For example, EPA in the summer of 1983 reviewed OSHA's asbestos risk assessment, which is a part of both the emergency rule and the proposed revision. In June 1983, to provide an ongoing forum for exchange of information, several agencies, including OSHA, EPA, and the Consumer Product Safety Commission, established a work-

ing-level interagency asbestos task force. This working group has allowed the agencies concerned to coordinate efforts on exposure assessment and estimation of the health risks of asbestos. The next meeting of the Task Force is expected to be in late October or early November. OSHA also works closely with EPA and the Department of Education on the Asbestos Hazard School Safety Task Force. It is important to remember that these agencies operate under different statutes and that the nature of their regulatory response is determined by their respective statutory authorities. OSHA's enabling legislation, for example, limits OSHA to addressing workplace hazards and requires it to consider feasibility and significant risk in developing standards.

OSHA has a special relationship with another Federal agency with particular responsibility for health and safety conditions in Federal buildings. The role of the General Services Administration (GSA) in Federal workplace safety and health is specified in Executive Order 12196. Upon request, GSA is to assist Federal agencies in carrying out their duties by accompanying OSHA inspectors, or the inspectors of the agencies concerned, on inspections of facilities subject to GSA authority. GSA is also required to assure prompt attention to agency reports of unsafe or unhealthful conditions in facilities subject to GSA authority.

To reaffirm the respective roles of GSA and OSHA, the two agencies concluded a Memorandum of Understanding in February 1982. The Memorandum emphasizes that GSA, as the agency responsible for providing government-owned or leased space, is obligated to provide to agencies space that does not contain serious hazards or serious violations of OSHA standards. GSA and OSHA agreed in the Memorandum on the need for uniform standards in acquiring leased space and declared that OSHA standards will be used by GSA in securing such space. The Memorandum also provides that, to the extent that GSA deems necessary, GSA is to assume responsibility for determining whether OSHA standards are met in State and local building requirements. OSHA is to provide advice and technical assistance to GSA in making this determination. Where buildings that fall short of complying with OSHA standards are already occupied or are the only space available, GSA is to take every possible step to abate any hazards.

### OSHA'S ENFORCEMENT OF ITS STANDARD

Federal OSHA and the state-plan states have special emphasis programs for asbestos in both the manufacturing and construction industries. OSHA Area Offices have been conducting a sizable number of programmed inspections in workplaces where asbestos exposure occurs. The agency's compliance officers are also visiting construction sites which EPA has identified to OSHA as sites of demolition operations or asbestos removal. In FY 1984, asbestos ranked as the second most sampled substance sent to OSHA's Salt Lake City Laboratory for analysis. Nearly 6,000 air samples to detect possible asbestos exposure were taken by OSHA compliance officers during 1,395 inspections in both Federal and private-sector workplaces that year. (These are samples taken on Federal OSHA inspections; the States rely on an OSHA-funded laboratory at the University of Wisconsin for analysis of their samples.)

As for surveillance of potential exposures in office buildings, OSHA's enforcement efforts are necessarily focused on the most hazardous worksites in high hazard industries. In FY 1984, Federal OSHA has conducted more than 1,000 inspections in Federal workplaces, out of a total of nearly 70,000 inspections in the Federal and private sectors during that year. Since OSHA compliance officers can inspect only about two percent of the nation's workplaces each year, virtually all of the agency's planned inspections are now conducted in high hazard workplaces. OSHA, therefore, would not generally schedule inspections in office buildings, but would of course respond to a serious complaint from an employee in such a building. The authors of the Occupational Safety and Health Act wisely included a provision requiring a prompt response by OSHA to an employee's report of a potentially serious hazard.

In recent years OSHA has developed an aggressive inspection program in Federal agencies. Until 1983, OSHA's enforcement resources were primarily directed to private sector workplaces. Almost all complaints from Federal employees were referred back to the agencies for action; for the most part, OSHA inspected a Federal workplace only when an agency failed to resolve an employee's complaint. Thus, from the time the present Executive Order became effective in October 1980 (with the issuance of implementing regulations) through 1982, OSHA made about 200 inspections in Federal agencies. In 1983 OSHA issued new instructions to its field personnel on procedures to follow in conducting inspections targeted to high hazard Federal workplaces, and inspections in response to fatality and catastrophe investigations

and to formal employees reports of serious safety or health hazards. Consequently, the number of Federal-sector inspections conducted by OSHA has increased dramatically—to 1142 in the first eleven months of FY 1984.

In this discussion, it is important to remember that OSHA's role as an enforcer in Federal workplaces is different from its role in the private sector. The Act and the Executive Order give primary responsibility for workplace conditions in the Federal sector to the individual agencies. Agencies are required to conduct annual self-inspections of all workplaces and to correct any hazards that are identified. OSHA carefully evaluates the safety and health programs of the agencies to assure that the self-inspection mechanism is working and that hazards are abated. When OSHA itself conducts inspections in Federal workplaces, no citations with monetary penalties are issued; the motivating factor for Federal managers lies in the inspection itself and in the top-level commitment of the Executive Branch to safety and health in the Federal workplace. This commitment was reinforced in December 1982, when the President instructed all Federal agency heads to review their safety and health programs in order to ensure the concern of their management staff to occupational safety and health. In October 1983 the President took further action by establishing a five-year government-wide goal of a three-percent annual reduction in workplace injuries and illnesses for fiscal years 1984 and 1985.

Of the 1142 inspections that OSHA conducted in Federal workplaces in the first eleven months of FY 1984, 112 were conducted to assess possible exposure to asbestos. Analysis of the samples taken on these inspections, during a representative five-month period in 1984, reveals no asbestos fibers in 91 percent of the samples taken. In addition, no sample exceeded 0.5 fibers per cc. of air, and only 1.5 percent of the samples exceeded 0.1, a level below the lowest limit in the proposed new standard and far below the current permissible exposure limit. Virtually all workplace asbestos exposures, then, in the Federal facilities surveyed by OSHA in the past year, are below the lowest limit suggested in OSHA's proposed new standard.

The most serious potential hazards from asbestos exposure to workers in the Federal sector appear to exist when asbestos is disturbed in buildings or ships that are undergoing repair, renovation or demolition. In instances where demolition or renovation operations may pose a potential threat to employees, OSHA is making every effort to limit and control the exposure. In addition, OSHA has conducted extensive inspections of Federal shipyards, where asbestos is likely to be found in the work environment. The Department of the Navy has worked with OSHA in safeguarding its shipyard employees from asbestos hazards.

In addition to conducting inspections, OSHA offers technical assistance and consultation to Federal agencies. The Department of Labor has made other Federal agencies aware of OSHA's willingness to share its knowledge about workplace safety and health hazards. In January 1983 the Secretary of Labor sent a letter to all agency heads offering OSHA's assistance in implementing the President's goals for reducing workplace injuries and illnesses in the Federal Government. This was immediately followed by a second letter to all Designated Agency Safety and Health Officials notifying them that OSHA would be identifying high-hazard workplaces and offering services such as training, hazard identification, and advice on abatement. During the past year, for example, OSHA industrial hygienists conducted onsite visits at various offices of the National Labor Relations Board (NLRB). The NLRB had requested OSHA's assistance in identifying possible asbestos exposure in a number of buildings where employees were located. OSHA personnel inspected the workplaces and advised the NLRB of their findings in writing. In the Atlanta Region alone, in the past year, OSHA responded to thirty-two such requests for assistance from Federal agencies. Visits were made to facilities of the Postal Service, Internal Revenue Service, National Oceanic and Atmospheric Administration, Federal Aviation Administration, the Fish and Wildlife Service, and the Coast Guard.

To summarize, then, OSHA carries out a vigorous program to protect Federal employees from the dangers of asbestos. In FY 1984, OSHA conducted almost 1,400 inspections for possible asbestos exposure in Federal and private sector workplaces. In the first eleven months of FY 1984, samples were gathered for asbestos in 112 inspections in Federal workplaces. Most importantly, OSHA is moving to a lower permissible workplace exposure limit for asbestos, which will lead to lower levels for Federal workplaces as well. The agency is determined to reduce asbestos exposure in both public and private sector workplaces to the lowest feasible level.

That concludes my prepared remarks. I will be happy to answer any questions.

Mr. YOUNG. Please proceed.

**TESTIMONY OF JOHN B. MILES, JR., DIRECTOR OF FIELD OPERATIONS, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION**

Mr. MILES. Yes, sir, Mr. Chairman.

Thank you for the opportunity to bring you up to date on the efforts of the Occupational Safety and Health Administration to protect Federal employees from possible asbestos hazards in the workplace.

Since the agency's most recent testimony to the subcommittee on this subject last March, OSHA has proposed a new asbestos standard that would significantly reduce permissible asbestos exposure levels for American workers.

A little bit about OSHA's asbestos standard:

As I reported to the subcommittee at its last hearing last March, OSHA has long recognized the dangers resulting from occupational exposure to asbestos. The agency's first comprehensive health standard, issued on June 7, 1982, regulated asbestos.

This rule, which is the asbestos standard in effect today, initially established a permissible 8-hour exposure limit of 5 fibers of asbestos per cubic centimeter of air, and later of 2 fibers, with a maximum ceiling concentration of 10 fibers per cubic centimeter at any one time.

The 1972 asbestos standard has served in many ways as a model for subsequent health regulations issued by OSHA. It establishes a maximum permissible exposure limit as well as requirements for monitoring, medical surveillance, labels, waste disposal, recordkeeping, and change-of-clothing rooms.

On November 4, 1983, OSHA issued an emergency temporary standard which would have immediately lowered the permissible exposure limit for asbestos from two fibers to a half fiber per cubic centimeter of air.

This emergency standard, however, was immediately challenged and stayed by the U.S. Court of Appeals for the Fifth Circuit, pending a decision on March 7, 1984 that an emergency rule was not warranted in this instance.

On April 10, 1984, OSHA proposed a revision to its permanent asbestos standard which would reduce the permissible exposure limit, on an 8-hour time-weighted average, to either 0.5 fibers or 0.2 fibers per cubic centimeter.

The final decision on a permissible limit will be made after OSHA officials study evidence provided by the public regarding health risk as well as the technical and economic feasibility of the alternatives.

The proposal also addresses issues such as the definition of asbestos fibers, changes in the standard's recordkeeping requirements, modification of the monitoring requirement, the use of regulated areas, and the need for an asbestos action level to trigger certain requirements such as monitoring, medical surveillance, and protective clothing.

OSHA's enforcement of its standard:

Federal OSHA and the State-plan States have special emphasis programs for asbestos in both the manufacturing and construction industries. OSHA area offices have been conducting a sizable

number of programmed inspections in workplaces where asbestos exposure occurs.

The agency's compliance officers are also visiting construction sites which EPA has identified to OSHA as sites of demolition operations or asbestos removal.

In fiscal year 1984, asbestos ranked as the second most sampled substance sent to OSHA's Salt Lake City laboratory for analysis.

Nearly 6,000 air samples to detect possible asbestos exposure were taken by OSHA compliance officers during 1,395 inspections in both Federal and private-sector workplaces that year.

These are samples taken on Federal OSHA inspections; the States rely on an OSHA-funded laboratory at the University of Wisconsin for analysis of their samples.

As for surveillance of potential exposures in office buildings, OSHA's enforcement efforts are necessarily focused on the most hazardous work sites in high hazard industries.

In fiscal year 1984, Federal OSHA has conducted more than 1,000 inspections in Federal workplaces, out of a total of nearly 70,000 inspections in the Federal and private sectors during that year.

Since OSHA compliance officers can inspect only about 2 percent of the Nation's workplaces each year, virtually all of the agency's planned inspections are now conducted in high hazard workplaces.

OSHA, therefore, would not generally schedule inspections in office buildings, but would, of course, respond to a serious complaint from an employee in such a building. The authors of the Occupational Safety and Health Act wisely included a provision requiring a prompt response by OSHA to an employee's report of a potentially serious hazard.

In recent years, OSHA has developed an aggressive inspection program in Federal agencies. Until 1983, OSHA's enforcement resources were primarily directed to private sector workplaces.

Almost all complaints from Federal employees were referred back to the agencies for action; for the most part, OSHA inspected a Federal workplace only when an agency failed to resolve an employee's complaint.

Thus, from the time the present Executive order became effective in October 1980 with the issuance of implementing regulations, through 1982, OSHA made about 200 inspections in Federal agencies.

In 1983, OSHA issued new instructions to its field personnel on procedures to follow in conducting inspections targeted to high hazard Federal workplaces, and inspections in response to fatality and catastrophe investigations and to formal employee reports of serious safety or health hazards.

Consequently, the number of Federal sector inspections conducted by OSHA has increased dramatically to 1,142 in the first 11 months of fiscal year 1984.

In this discussion, it is important to remember that OSHA's role as an enforcer in Federal workplaces is different from its role in the private sector. The act and the Executive order give primary responsibility for workplace conditions in the Federal sector to the individual agencies.

Agencies are required to conduct annual self-inspections of all workplaces and to correct any hazards that are identified. OSHA carefully evaluates the safety and health programs of the agencies to assure that the self-inspection mechanism is working and that hazards are abated.

When OSHA itself conducts inspections in Federal workplaces, no citations with monetary penalties are issued; the motivating factor for Federal managers lies in the inspection itself and in the top-level commitment of the executive branch to safety and health in the Federal workplace.

This commitment was reinforced in December 1982, when the President instructed all Federal agency heads to review their safety and health programs in order to ensure the concern of their management staff to occupational safety and health.

In October 1983, the President took further action by establishing a 5-year, Governmentwide goal of a 3-percent annual reduction in workplace injuries and illnesses for fiscal years 1984 and 1985.

Of the 1,142 inspections that OSHA conducted in Federal workplaces in the first 11 months of fiscal year 1984, 112 were conducted to assess possible exposure to asbestos. Analysis of the samples taken on these inspections, during a representative 5-month period in 1984, reveals no asbestos fibers in 91 percent of the samples taken.

In addition, no sample exceeded 0.5 fibers per cc of air, and only 1.5 percent of the samples exceeded 0.1, a level below the lowest limit in the proposed new standard, and far below the current permissible exposure limit.

Virtually all workplace asbestos exposures, then, in the Federal facilities surveyed by OSHA in the past year are below the lowest limit suggested in OSHA's proposed new standard.

The most serious potential hazards from asbestos exposure to workers in the Federal sector appear to exist when asbestos is disturbed in buildings or ships that are undergoing repair, renovation or demolition.

In instances where demolition or renovation operations may pose a potential threat to employees, OSHA is making every effort to limit and control the exposure.

In addition, OSHA has conducted extensive inspections of Federal shipyards, where asbestos is likely to be found in the work environment. The Department of the Navy has worked with OSHA in safeguarding its shipyard employees from asbestos hazards.

In addition to conducting inspections, OSHA offers technical assistance and consultation to Federal agencies. The Department of Labor has made other Federal agencies aware of OSHA's willingness to share its knowledge about workplace safety and health hazards.

In January 1983, the Secretary of Labor sent a letter to all agency heads offering OSHA's assistance in implementing the President's goals for reducing workplace injuries and illnesses in the Federal Government.

This was immediately followed by a second letter to all designated agency safety and health officials notifying them that OSHA would be identifying high hazard workplaces and offering services such as training, hazard identification and advice on abatement.

During the past year, for example, OSHA industrial hygienists conducted onsite visits at various offices of the National Labor Relations Board. The NLRB had requested OSHA's assistance in identifying possible asbestos exposure in a number of buildings where employees were located. OSHA personnel inspected the workplaces and advised the NLRB of their findings in writing.

In the Atlanta region alone, in the past year, OSHA responded to 32 such requests for assistance from Federal agencies. Visits were made to facilities of the Postal Service, Internal Revenue Service, National Oceanic and Atmospheric Administration, Federal Aviation Administration, the Fish and Wildlife Service, and the Coast Guard.

To summarize, then, OSHA carries out a vigorous program to protect Federal employees from the dangers of asbestos. In fiscal year 1984, OSHA conducted almost 1,400 inspections for possible asbestos exposure in Federal and private sector workplaces.

In the first 11 months of fiscal year 1984, samples were gathered for asbestos in 112 inspections in Federal workplaces. Most importantly, OSHA is moving to a lower permissible workplace exposure limit for asbestos, which will lead to lower levels for Federal workplaces as well.

The agency is determined to reduce asbestos exposure in both public and private sector workplaces to the lowest feasible level.

That concludes my prepared remarks. I will be happy to answer any questions.

Mr. YOUNG. Thank you very much, Mr. Miles, for your very comprehensive overview.

We will now go to some questions for the panel and I will try to move through them. If we don't ask them all, we might submit some in writing, so we can get it into the record.

Thank you, Mr. Craig, and let me ask why did the Postal Service decide on an asbestos program in 1980? Who made the decision and what factors was it based on?

Mr. CRAIG. Well, the decision was made by the people who generally promulgate regulations at the Postal Service—the Senior Assistant Postmaster General level. It was really a joint decision between the employee and labor relations area, and the area of administration that has responsibility for the design and construction of the facilities.

The decision, I believe, was made because at that point it was already apparent that asbestos could pose health hazards, depending upon its presence in the atmosphere. I think we have heard a lot today about the difficulties of really getting an exact reading on just how dangerous asbestos is. Faced with perhaps some uncertainty as to what is a safe amount, the Postal Service decided that it should undertake abatement wherever these materials were found, and so we adopted, with regard to the sprayed-on fireproofing, a program of identifying where this existed, and either removing or encapsulating it wherever it was.

Mr. YOUNG. In your testimony you say you consulted with OSHA?

Mr. CRAIG. Oh, yes, we talked with them and with the EPA.

Mr. YOUNG. And you use the OSHA standards to determine whether to take corrective action?

Mr. CRAIG. Well, we basically use the OSHA standards, particularly where we have the material staying in place for any period of time before action is taken on it. As far as determining what action to take, however, we essentially decided on our own that where we found friable material that was sprayed on, our own standard was to remove it or to encapsulate it.

Mr. YOUNG. When you find friable asbestos in leased buildings, who is responsible for that abatement, and if the owner isn't, how do you enforce that abatement?

Mr. CRAIG. That is a difficult one. I think in general the owner probably is not responsible for it in the sense that if the building was built under existing codes, and not inconsistently with any postal requirements, it would be difficult, if not impossible, for us to come back to the owner and say, you have got to change that now. Unless we can do that, and find something clearly that assesses this against the owner, the Postal Service would prepare——

Mr. YOUNG. We have noticed you have got about 40,000 leased facilities.

Mr. CRAIG. We have about 30,000 leased facilities, that is right, a very large number.

Mr. YOUNG. I was talking to staff. They don't want to look through all of those leases, I can tell you that. We don't have that responsibility. Does the Postal Service require any type of contractor certification prior to letting of a contract for the abatement program?

Mr. CRAIG. Not specifically.

We have, as we indicated, an extensive training program with our staff that are responsible for the contracting, and in our management instructions we require that all the procedures of the EPA and so forth be followed by the people who are going to be involved in the removal process.

Our training program, of course, gives a lot of guidance to the people who are going to be working on the contracts, working with the architect and eventually with the contractors.

We are specific when we go out for contractors that we are looking for people who are experienced and who understand that they are obligated to do this work in accordance with the EPA requirements. Something like certification in this kind of thing would be something that, as I guess we have heard today, is either done or not done by State and local governments. We would rely upon those programs for that specific certification.

Mr. YOUNG. Thank you very much.

Mr. Ellis, you suggest in your testimony that the agencies involved, in your testimony on page 6 you state that the institute is considering actions to evolve a building community consensus on asbestos risk and abatement.

When will you decide whether to seek such a consensus and how long do you expect it would take?

Mr. ELLIS. The first part of your question again, Mr. Chairman.

Mr. YOUNG. In your testimony on page 6 you state that the institute is considering actions to evolve a building community consensus on asbestos risk and abatement.

When will you decide whether to seek such a consensus and how long do you expect it would take?

We are going to pull that one back for a half a minute. We are going to try it again. We made a mistake, I assume, on page 6. Shall I try it again?

Mr. ELLIS. Go ahead.

Mr. YOUNG. Mr. Ellis, you stated the institute is considering action to evolve a building community consensus on asbestos risk and abatement. When will you decide whether to seek such a consensus and how long do you expect it would take?

Mr. ELLIS. Mr. Chairman, these are questions for the Institute and not the asbestos task force chairman, so I would ask Mr. Brewer to respond to that question.

Mr. BREWER. We have discussions going on with EPA right now to bring building community input to its standards activities. We think that input will be a great help to EPA, as it brings field expertise to its deliberations on developing standards and guidelines that the building community needs.

Mr. YOUNG. Mr. Ellis, we note you are past chairman of ASTM. Can you share with the committee ASTM's position on this issue and what information does ASTM have on asbestos standards?

Mr. ELLIS. As I mentioned earlier, ASTM used to be the American Society for Testing and Materials, but that is now a misnomer. It was a name coined some 80 years ago. ASTM, in fact, is probably the largest developer of voluntary consensus standards in the world and I am not exaggerating when I say that. Participants in the ASTM standards process come from the private sector, Government, and other general interest organizations. For example, representatives of NBS fill more than 700 slots on ASTM technical committees. The standards developed by ASTM are full consensus standards, developed voluntarily and used voluntarily by parties of interest. Because of ASTM's unique way of operating, it does not take any position on proposed legislation.

ATSM provides information, makes findings, and develops standards to assist legislators and others. Earlier I mentioned the function of building codes and standards in the building regulatory process. In large measure the building codes and standards are based on private voluntary consensus standards such as those developed by ASTM and others, through the cooperation of everyone concerned in the building community.

You asked what specifically ASTM has to offer in the way of standards concerning asbestos in buildings. ASTM recently held an interesting symposium resulting in a publication, recently issued. It is called "Definitions for Asbestos and Other Health-Related Silicates." The question of the definition for asbestos has been debated for many years, and the question is still, What kind of a particle is asbestos and how shall it be regulated?

That depends to a large extent on the definition. The ASTM symposium addressed the question of defining asbestos. This publication carries the papers from the participants in the symposium. Each of the papers has been subjected to peer review so that the publication truly presents a sound scientific and technical data.

Mr. YOUNG. I guess the last question, Mr. Ellis, is what is the current state of the art regarding abatement of asbestos in privately owned office buildings? Are building owners taking action to have the material removed if it is friable?

Mr. ELLIS. I have to say, Mr. Chairman, that the present state of the art is one of great confusion because of the variety of standards and guidelines, the great variety of building types and conditions, and the variety of geographical areas in our country that have differing assessment and abatement procedures. The fact that there is such confusion again illustrates the need for national standards to identify asbestos hazards and to identify appropriate methods and techniques for abating the hazards.

I might add one more thing, Mr. Chairman. Discussion abatement in these proceedings seems to lean toward removal. Abatement does not consist of just removal, but also of encapsulation and even enclosure. The decision to use one of the techniques of abatement should depend upon the assessment of each building. The mere presence of asbestos in a building should not require that the asbestos be removed.

Thank you, Mr. Chairman.

Mr. YOUNG. Thank you. Mr. Kammer, have your guidelines for assessment and abatement of asbestos containing materials in buildings been issued by other agencies in addition to GSA, and have the Postal Service and Veterans' Administration used them?

Mr. KAMMER. I believe not, sir.

Mr. YOUNG. You believe, no?

Mr. KAMMER. No; only PBS as far as I know.

Mr. YOUNG. Have you developed other guidelines for asbestos in buildings and industrial workplaces?

Mr. KAMMER. Only the guidelines we provided for the PBS.

Mr. YOUNG. Dr. Melius, in the previous testimony from NIOSH before the subcommittee in March, the list of hazard evaluation and technical assistance reports concerned with asbestos contained a statement on the first page that said:

> When these surveys detected asbestos in air in concentrations above the NIOSH recommended limit, or when the asbestos was in a friable condition, then recommendations for asbestos abatement were made. Since NIOSH now considers asbestos to be carcinogen, the more recent reports recommended elimination of asbestos where it was detected.

Would you explain for us whether this statement means the presence of friable asbestos in itself requires abatement action? And second, the practical meaning in terms of guidance to the statement that elimination of asbestos is now recommended.

Mr. MELIUS. Let me answer that in two parts. I may have Mr. Lemen answer second. With regard to our assessments in buildings, when we find asbestos in a friable form in that building and indications that the friability is going to lead to exposure for people in that building, we do recommend that corrective actions take place.

Those corrective actions can include removal, encapsulation, and so forth. But we do consider that any time one finds asbestos in a friable condition; that is, generating some action is necessary to follow up on this. I will let Mr. Lemen, who is in charge of our criteria division, speak to that.

Mr. YOUNG. Mr. Lemen.

Mr. LEMEN. I would like to make just one statement concerning that, since I did give a full, complete statement in my last testimony. Like Mr. Ellis, I have a great deal of respect for the health effects of asbestos. But unlike Mr. Ellis, I do fear asbestos. And I

think that his paraphrasing the Ontario Royal Commission's report on asbestos is somewhat misleading.

They did not conclude entirely that the presence of asbestos in buildings was a reason not to take action. To quote from the report, they had stated that the bad news is that maintenance, renovation, demolition, or even custodial work that disturbs friable asbestos can cause significant asbestos exposure for those doing the work and occasionally, for building occupants.

There may be also risks for building occupants if asbestos insulation is visibly falling from ceilings. This is consistent with our first testimony which we made on March 21, that when you see friable asbestos you should be alarmed at its presence and you should evaluate the situation on an individual basis. And this is not inconsistent with the Ontario Royal Commission report. Incidently, I was a participant in those proceedings. Thank you, Mr. Chairman.

Mr. YOUNG. Thank you. I guess the last question, Mr. Melius, is would you care to comment on why the Federal Government has been unable to set standards and issue guidelines for asbestos abatement?

Mr. MELIUS. There are several aspects in answering that question. First, NIOSH has made a series of recommendations over time on lowering exposures to asbestos to the lowest feasible limit. In 1976 we recommended 0.1 fibers per cubic centimeter be the limit based on commonly available analytical techniques at that time.

More recently in our evaluation of the GSA building in San Francisco, we have recommended that monitoring of asbestos exposure in that building, using newer techniques, can be done at even lower levels on the order of 0.01 fibers per cubic centimeter. So in terms of monitoring exposures, we are lowering limits through better methods of detection.

I suspect electron microscopy methods will allow us to monitor at even lower levels. I think the more difficult question in terms of getting standards has been developing guidelines for taking action for asbestos that is already in place. And, while we believe that there is room for individual judgment on that, we also believe that a reasonable set of guidelines can be developed and can be implemented throughout the country for asbestos assessment and abatement. And I think we would welcome that, also.

Mr. YOUNG. It is tough getting everybody together.

Mr. Miles, in your statement you explained OSHA's responsibility for employees in public schools. Does that mean that school personnel in the 25 States or jurisdictions are protected while those in the other States are not?

Mr. MILES. Yes, Mr. Chairman, that is true. Under the Occupational Safety and Health Act, if States administer their own federally approved programs, public school employees are covered; the States are required by the act to cover State and local government employees. In the other States, we are excluded from covering State and local government employees, including public school employees. That is in the OSH Act itself.

Mr. YOUNG. Thank you. I think we have pretty well covered the questions that we had for the panel. So on behalf of the committee, I appreciate everybody's participation today and hopefully we are

going to be making everybody move a little closer to try to resolve some questions that were out there.

So on behalf of the subcommittee and full committee, I do appreciate your participation today and the meeting will stand adjourned. Thank you.

[Whereupon, at 3:30 p.m., the committee was adjourned.]

# HEALTH HAZARDS ASSOCIATED WITH ASBESTOS CONTAINING MATERIALS IN PUBLIC FACILITIES

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MONDAY, OCTOBER 22, 1984

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
*St. Louis, MO.*

The subcommittee met, pursuant to call, at 9:33 a.m., in courtroom No. 2, fifth floor, U.S. Courthouse and Customhouse, 1114 Market Street, St. Louis, MO, Hon. Robert A. Young (chairman of the subcommittee) presiding.

Mr. YOUNG. The Subcommittee on Public Buildings and Grounds of the House Committee on Public Works and Transportation will please come to order.

I would first like to take this opportunity to welcome a distinguished group of witnesses as the subcommittee continues its fourth set of hearings on the adequacy of Federal efforts to protect Federal employees, schoolchildren, and Americans, in general, from asbestos hazards in our public and commercial buildings and our homes.

To date, the subcommittee has held two hearings in Washington, DC, and one hearing in San Francisco, CA, and it is my intention as chairman of the subcommittee to continue to hold field hearings across the country to determine what information is being transmitted by the Federal Government to State and local officials concerning the question of asbestos which has been linked to fatal cancers.

At the last subcommittee hearing on October 2, 1984, it was clear that no single Federal department or agency had taken responsibility for administering a unified program to address the comprehensive issue of asbestos in schools, homes, or public buildings. It was clear there is confusion across the country by Government and school officials concerning removal or encapsulation of asbestos. It was clear that numerous contractors have been hired to do emergency asbestos removal projects and that some contractors have flushed these toxic materials down public toilets or placed them in plastic bags and dumped them in municipal garbage landfills. The haphazard and careless disposal of these materials may only be making a bad situation even worse.

Evidence linking asbestos to fatal cancers has been available for over half a century, and yet, our Government's efforts to confront what has become a virtual public health emergency are still at the

most primitive stages of development. It is estimated that some 15 million children and 1.4 million school employees work in buildings containing friable asbestos, yet, to date, the Environmental Protection Agency's only response has been to require inspection of such facilities and require the posting of a notice when asbestos is found.

Public outrage over inadequate Government efforts to control this hazardous toxic substance has intensified. Companies which previously manufactured asbestos are urging the Federal Government to establish guidelines and standards for asbestos abatement. The Environmental Protection Agency has stated in previous hearings that their information and technical assistance programs are adequately addressing the problems of schools and public buildings. However, serious questions have been raised over the effectiveness of the Federal programs.

During the subcommittee hearing in California, we received testimony from numerous Federal employees that during renovation of a Federal building for removal of asbestos, no industrial hygienist was present to monitor the work, and carpets filled with asbestos were literally being pulled down the corridors allowing asbestos to become airborne and infiltrate the ventilation system.

Today, Ms. Ann Jones, the principal representative for the American Federation of Government Employees Local No. 236 plans to discuss concerns expressed by Federal employees during the recent removal of asbestos from the National Federal Records Center in Overland, MO.

I am greatly concerned that, to date, no contractor certification is necessary for the removal of asbestos from facilities. I question why there is no continuity within the Federal Government regarding asbestos abatement and safe levels of exposure to asbestos. The Government should have a uniform policy regarding asbestos, a reliable set of guidelines should be published by the administration which would help dispel unwarranted panic while giving officials a set course of action.

Protection of the health of the workers, students, and the general public should be No. 1 priority with the Federal agencies charged with responsibility for protecting our environment from toxic substances. I am hopeful today that this hearing will find that the Federal Government, in fact, has taken the necessary action to put its own house in order and that a uniformed policy is in place regarding asbestos. However, if we find that is not the case and confusion regarding asbestos abatement continues to prevail, it would be my intention as chairman of the subcommittee to introduce legislation in the 99th session of Congress designed to rectify the situation.

Again, I welcome all of our witnesses and look forward to your testimony.

Our first witnesses will be Mr. Morris Kay, the Regional Administrator of the Environmental Protection Agency, in region VII; and I wonder if Mr. Platt—Morris, would you want Mr. Platt to appear—fine, Mr. Kay.

Mr. Kay, the full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

STATEMENT OF MORRIS KAY, REGIONAL ADMINISTRATOR, REGION VII, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and Members of the Subcommittee. I am Morris Kay, Regional Administrator, Environmental Protection Agency (EPA) Region VII, Kansas City, Missouri. I want to thank the Subcommittee for this opportunity to present information about our regional Asbestos Control Program.

Nationally, approximately 25 million metric tons of asbestos-containing materials were spray-applied onto walls, ceilings and structural steel of numerous buildings, including schools, between 1946 and 1978. Asbestos offered many desirable qualities in construction and was used mainly for fireproofing, thermal insulation, acoustics and decoration. These spray-applied materials are by their very nature "friable," capable of being crumbled or pulverized by hand pressure. Such friable materials pose the threat of releasing asbestos fibers into the building air with the attendant risk of inhalation by the occupants.

In 1978, we began a voluntary Asbestos Control Program in the four Region VII states, Iowa, Kansas, Missouri, and Nebraska. This voluntary program consisted in part of evaluating asbestos exposure situations in schools and in public and private buildings and offering abatement advice. After the EPA asbestos regulations pertaining to schools were published in 1982, we initiated and are now conducting a two-fold asbestos control program of both technical assistance and enforcement.

During the past six years, we have assisted school officials and public and private building owners in evaluating the asbestos hazard, identifying the asbestos control options and in developing remedial specifications.

In our effort to assist schools with their asbestos problems, we sought help from the states. In the all of 1978, the Governor of Missouri assigned responsibility for Missouri's asbestos program to the division of health. In 1980, the Missouri Department of Elementary and Secondary Education joined in this federal/state partnership to assist schools. Surveys were conducted, sampling kits were sent, and abatement advice was provided. The result of our efforts has been that approximately 15 percent of Missouri's schools have requested and received site visits and detailed advice on appropriate remedial measures tailored to their buildings. Several of these schools have already taken corrective action.

The same technical assistance provided to schools and building owners has been made available to other federal agencies, in particular the General Services Administration (GSA), Federal Aviation Administration (FAA), Department of Defense (DOD), National Institute of Occupational Safety and Health (NIOSH), and the U.S. Postal Service. Training of federal employees in these agencies has already occurred and will be updated as new asbestos information is developed.

Training of school representatives, building owners and state officials is also top priority activity. For example, we have trained approximately 300 state inspectors in the region with half of these being in Missouri. The Missouri inspectors examined all state-owned and -leased buildings utilizing EPA's evaluation and hazard assessment scheme. We plan to provide additional training to the Missouri Division of Health and the St. Louis Commissioner of Health's staff within the next few months.

We provide information on asbestos removal, encapsulation and enclosure techniques to asbestos abatement contractors at a rate of about 10 per day. This demand is not limited to Region VII but is occurring in the Agency's office nationwide. To meet this need, EPA is funding three asbestos training centers in Kansas City, Boston, and Atlanta. The type of training offered will be unique in that it will provide contractors, school officials and other interested parties the opportunity to gain "hands-on" experience in all asbestos abatement techniques. The goal of the training program is to produce skilled craftsmen capable of safely eliminating asbestos exposure situations.

During FY 84, EPA enforcement activities included inspections in 155 school systems throughout the region to determine if they were in compliance with the Asbestos-In-Schools Rule. Eighty-three percent of these school systems were found to be in violation of some rule requirements. The most common rule violations we have detected are the failure to inspect properly and the failure to notify parents. To date, we have issued warning letters to 36 schools and civil complaints with proposed penalties to three schools in Missouri. All of these schools have now complied with the rule requirements and asbestos abatement has occurred in one school district allowing the Agency to reduce the penalty to zero.

While our first efforts have been directed to achieving voluntary compliance, we have also increased our efforts in the enforcement program. Our asbestos control staff has increased from one part-time regional asbestos coordinator in 1979 to a

full-tme coordinator at present. In addition, five retired citizens, hired through the American Association of Retired Persons, devote an average of four days a week to school inspections and technical assistance. Four other EPA employees spend one-fourth of their time developing asbestos enforcement cases. In FY 85 we anticipate increasing this staff by six additional retired citizens and one full-time technical employee. This increase will allow us to double our school compliance inspections and our abatement assistance in all types of asbestos situations.

Most regional environmental programs are delegated cooperatively to the states with EPA retaining overview and support responsibilities. However, the asbestos program has not been designated for state delegation by Congress. In order for the asbestos control program to succeed, we need the continued help of the states. In FY 85, EPA has increased its state grant program under the Toxic Substances Control Act to include asbestos in schools enforcement and technical assistance activities. All states in Region VII have been invited to participate in this grant program. To date, we have received a proposal from the State of Iowa.

Since Federal funding for asbestos abatement will be available to the schools with the highest priority need, we encourage all school systems to seek local resources. The local communities are in the best position to address the individual needs and funding requirements of each abatement project.

This concludes my prepared remarks. Mr. Chairman, I would be pleased to respond to any questions you may have.

Mr. YOUNG. Please proceed.

## TESTIMONY OF MORRIS KAY, REGIONAL ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, REGION NO. VII

Mr. KAY. Thank you, Mr. Congressman and good morning to you.

I am Morris Kay, Regional Administrator with the Environmental Protection Agency, region VII. I want to thank the subcommittee for this opportunity to present information about our regional asbestos program.

In 1978, we began a voluntary asbestos control program in the four region VII States which are Iowa, Kansas, Missouri, and Nebraska. This voluntary program consisted in part of evaluating asbestos exposure situations in schools and in public and private buildings and offering abatement advice. After the EPA asbestos regulations pertaining to schools were published in 1982, we initiated and are now conducting a two-fold asbestos control program of both technical assistance and enforcement.

During the past 6 years, we have assisted school officials and public and private building owners in evaluating the asbestos hazard, identifying the asbestos control options and in developing remedial specifications.

In our effort to assist schools with their asbestos problems, we sought help from the States. In the fall of 1978, the Governor of Missouri assigned responsibility for Missouri's asbestos program to the division of health. In 1980, the Missouri Department of Elementary and Secondary Education joined in this Federal/State partnership to assist schools. Surveys were conducted, sampling kits were sent, and abatement advice was provided. The result of our efforts has been that approximately 15 percent of Missouri's schools have requested and received site visits and detailed advice on appropriate remedial measures tailored to their buildings. Several of these schools have already taken corrective action.

The same technical assistance provided to schools and building owners has been made available to other Federal agencies, in particular the General Services Administration, Federal Aviation Ad-

ministration, Department of Defense, National Institute of Occupational Safety and Health, and the U.S. Postal Service.

Training of Federal employees in these agencies has already occurred and will be updated as new asbestos information is developed.

Training of school representatives, building owners and State officials is also a top priority activity. For example, we have trained approximately 300 State inspectors in the region with half of these being in Missouri. The Missouri inspectors examined all State-owned and -leased buildings utilizing EPA's evaluation and hazard assessment scheme. We plan to provide additional training to the Missouri Division of Health and the St. Louis Commissioner of Health's staff within the next few months.

We provide information on asbestos removal, encapsulation and enclosure techniques to asbestos abatement contractors at a rate of about 10 per day. This demand is not limited to region VII, but is occurring in the Agency's offices nationwide. To meet this need, EPA is funding three asbestos training centers in Kansas City, Boston, and Atlanta. The type of training offered will be unique in that it will provide contractors, school officials and other interested parties the opportunity to gain hands-on experience in all asbestos abatement techniques. The goal of the training program is to produce skilled craftsmen capable of safely eliminating asbestos exposure situations.

During fiscal year 1984, EPA enforcement activities included inspections in 155 school systems throughout the region to determine if they were in compliance with the asbestos-in-schools rule. Eighty-three percent of these school systems were found to be in violation of some rule requirements. The most common rule violations we have detected are the failure to inspect properly and the failure to notify parents.

To date, we have issued warning letters to 36 schools and civil complaints with proposed penalties to 3 schools in Missouri. All of these schools have now complied with the rule requirements and asbestos abatement has occurred in one school district allowing the Agency to reduce the penalty to zero.

While our first efforts have been directed to achieving voluntary compliance, we have also increased our efforts in the enforcement program. Our asbestos control staff has increased from one part-time regional asbestos coordinator in 1979 to a full-time coordinator at present. In addition, five retired citizens, hired through the American Association of Retired Persons, devote an average of 4 days a week to school inspections and technical assistance. Four other EPA employees spend one-fourth of their time developing asbestos enforcement cases.

In fiscal year 1985, we anticipate increasing this staff by six additional retired citizens and one full-time technical employee. This increase will allow us to double our school compliance inspections and our abatement assistance in all types of asbestos situations.

Most regional environmental programs are delegated cooperatively to the States with EPA retaining overview and support responsibilities. However, the asbestos program has not been designated for State delegation by Congress. In order for the asbestos control program to succeed, we need the continued help of the

States. In fiscal year 1985, EPA has increased its State grant program under the Toxic Substances Control Act to include asbestos in schools enforcement and technical assistance activities. All States in region VII have been invited to participate in this grant program. To date, we have received a proposal from the State of Iowa.

Since Federal funding for asbestos abatement will be available to the schools with the highest priority need, we encourage all school systems to seek local resources. The local communities are in the best position to address the individual needs and funding requirements of each abatement project.

This concludes my prepared remarks. Mr. Chairman, I would be pleased to respond to any questions you may have.

I would also ask that the entire script be entered for the record.

Mr. YOUNG. Thank you very much, Mr. Kay.

You stated that 83 percent of the schools were found to have inspected their schools improperly or not notified parents. Could you elaborate on that statement? For instance, who does the actual inspections of schools, a janitor or a contractor or one of the volunteers?

Mr. KAY. Mr. Chairman, it is my understanding that the initial asbestos-in-schools rule required that schools themselves were responsible for the inspections. When called upon, our office offered the technical assistance and onsite visits to accommodate the schools at that time. The asbestos-in-schools rule required the schools to take samples if they identified what appeared to be asbestos; if that material was friable, they had the responsibility to notify the parents and the schools, the PTA, et cetera, and the teacher employees. What we are finding is that the notifications were not done. Therefore, the schools would be in violation of some form of the rule itself.

As I indicated, the most common rule violation that was detected was failure to inspect properly and failure to notify the parents after they had done the inspections.

Mr. YOUNG. Well, appear to they do have a problem, don't they, Mr. Kay? Where would the expertise come from to inspect; janitors or contractors?

Mr. KAY. The school superintendents generally were the ones that were given responsibility. I am not sure. I would assume that they contacted our Agency to seek advice on that. We would advise them on the matter of inspection and how to gather the samples.

That information was provided directly to the school superintendents.

Mr. YOUNG. How many schools has EPA cited? Are you aware of the national number?

Mr. KAY. No, sir. I am not aware of the national number. In our four States, we have 5,500 school districts that are public districts and about a thousand private school districts. We have inspected over 1,000 of those schools ourselves.

Mr. YOUNG. Mr. Kay, would you tell us how many asbestos coordinators you have for your region and how many States are in the region? Further, how many schools are in that area and how many of those schools have contacted your office for assistance?

Mr. KAY. We have one full-time asbestos coordinator.

Mr. YOUNG. How many States?

Mr. KAY. Four States: Iowa, Missouri, Kansas, and Nebraska.

Mr. YOUNG. Roughly how many schools?

Mr. KAY. Fifty-five hundred public schools, school districts; 1,000 private school districts.

Mr. YOUNG. No sense of him even going on, is there?

Mr. KAY. We also have the retired persons who assist in that program providing assistance. It is a big job, although in our region we have a backlog now of about 15 to 20 schools that have requested assistance and we will provide assistance to those schools.

Our lag time has been less than 30 days from the time they call us until the time we are able to make a site visit.

Mr. YOUNG. Is there any indication from the Washington office that there is going to be any additional coordinators brought aboard in your area that you might be familiar within the budget?

Mr. KAY. In fiscal year 1985, we expect to expand our staff by at least one technical person and an additional, I believe, six members of the retired group. We have five retired citizens through the American Association of Retired Persons now and we expect to expand that in fiscal year 1985.

Mr. YOUNG. Mr. Kay, in your remarks, I think you are talking about schools in the last paragraph as far as Federal funding for asbestos and you say the local communities are in the best position to address the individual needs and funding requirements for each project. They sure aren't in our area around here.

I am not expecting you to comment on that. We are just having a terrible time passing any sort of increases in funding for the schools such as a school levy. It just doesn't look like we will be getting anyplace.

I understand, Mr. Kay, that $50 million is available for the asbestos abatement program. Would the funds be distributed by EPA headquarters or will the regions distribute them, and do you know how much of that money will go to Missouri? In addition, Public Law 98-377 authorized an additional $100 million for fiscal year 1985 and the succeeding 3 fiscal years. Do you know whether EPA will request full funding in those years for the program?

Why don't we start with the funds, will they be distributed by EPA and how much will the regions get?

Mr. KAY. Mr. Chairman, it is my understanding that the funds will be distributed by EPA headquarters as opposed to the regions distributing the funds.

Mr. YOUNG. Mr. Kay, do you have any idea what level of funding Missouri would get?

Mr. KAY. I don't have any idea what Missouri will get. The law does specify that the asbestos abatement money will be made available to the schools with the highest priority need. It is my understanding that the States will be responsible for establishing that priority.

Mr. YOUNG. I see we have with us today as a witness, Mr. Jones, who is from the Missouri Department of Elementary and Secondary Education, so maybe we can get a little better handle on that.

Mr. Kay, is EPA providing the assistance for asbestos abatement and detection in buildings other than schools and has GSA called

upon you for assistance; if so, how many buildings have you surveyed for GSA and what were the results?

Mr. KAY. The EPA is providing assistance for asbestos abatement and detection in buildings other than schools, including a number of Government buildings, airports, public facilities.

GSA has called upon our region for assistance on a number of occasions and we have inspected their buildings and we have attempted to offer assistance to the GSA when requested to do so.

I will have to get you the actual number of times.

Mr. YOUNG. I would appreciate that.

Mr. KAY. We have found asbestos in some buildings and not in others. I would actually have to get you a survey of each building.

Mr. YOUNG. I would like to have that for your region. Particularly what about the FAA?

Mr. KAY. We have provided service also to the FAA. Right now we are working with two major airports in Missouri, both the St. Louis and Kansas City Airports, on asbestos advice for the airport authorities.

Mr. YOUNG. Is it true that there is a question of Lambert having asbestos at one time on the ceilings and the domes? Are you aware of that?

Mr. KAY. Yes; and it is still present. Actually, there are about 5½ acres of asbestos at Lambert Field to my understanding. It is very close to that.

Mr. YOUNG. So you are addressing or have you already addressed that problem, Mr. Kay?

Mr. KAY. We provided assistance and advice of whatever knowledge is available to our Agency and we have provided it to the city and to the airport authority.

Mr. YOUNG. What jurisdiction if any would your section have over the airport because it is owned by the city of St. Louis.

Mr. KAY. I can't answer that. We have provided the assistance to the authorities and I assume that perhaps that is the city then.

Mr. YOUNG. What about commercial building owners? Do you assist them?

Mr. KAY. We assist commercial building owners and we assist universities, hospitals, shopping centers, powerplants. Those are just examples of the types of facilities that have requested services from us and we have provided that assistance to them.

We have also provided assistance to bowling alleys, TV studios, restaurants, private facilities when requested to do so.

Mr. YOUNG. Before we leave that, it just looks like if there is a hazard, that is if asbestos is a hazard, we are going to have to live with it, I guess. I am not expecting you to comment on that, Mr. Kay.

Mr. KAY. Thank you.

Mr. YOUNG. It sure is a problem. Are you aware when EPA in the District of Columbia plans to issue their standards for determining when friable asbestos materials are hazardous and establish requirements for corrective action?

Mr. KAY. No, sir; I am not.

Mr. YOUNG. I think we have asked that question of the Agency, too, and I don't believe we have had a response back. Maybe we could collectively, between now and early January, try to get a re-

sponse, if you would, Mr. Kay, I would appreciate it. I guess I will direct the staff to ask that question one more time to the Director of the EPA.

We have a great subcommittee and I imagine a lot of them have other problems, so we appreciate your testimony this morning, Mr. Kay, and if you could follow up on some of the things that we have asked you this morning, we would appreciate it.

Mr. Kay, thank you very much for your appearance this morning.

Mr. KAY. Thank you, Mr. Chairman.

[The following was received from Mr. Kay:]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Kansas City, MO, January 3, 1985.*

Hon. ROBERT YOUNG,
*House of Representatives,*
*Washington, DC.*

DEAR MR. YOUNG: Your staff has provided us with the questions from the draft transcript of your Subcommittee on Public Buildings and Grounds hearing in St. Louis on October 22, 1984, which require followup answers from the Environmental Protection Agency. These questions and answers and two exhibits are enclosed.

If you have any questions or need additional information, please contact me.

Sincerely yours,

MORRIS KAY, *Regional Administrator.*

Enclosures.

QUESTIONS AND ANSWERS ON ASBESTOS

*Question.* Number of schools in Region 7?

Answer. There were 7048 public schools and 1141 private schools in the four-state region.

*Question.* How many schools have contacted EPA for assistance?

Answer. We estimate that 21,000 asbestos-related requests for advice and assistance have been received during the past six years. About half of these were from school officials.

*Question.* How many schools has EPA inspected?

Answer. EPA has a two-fold asbestos control program: (1) a technical assistance program which began in the fall of 1978; (2) and, an enforcement program which began in July 1983. 1029 onsite technical assistance evaluations have been performed since the fall of 1978; 621 enforcement inspections of schools have been performed within the four-state region since July 1983.

*Question.* Lag time between request for assistance and technical assistance evaluation?

Answer. The response time between a request for technical assistance and conducting an onsite visit averages three months. Immediate response to all requests for onsite technical assistance is not possible. This office periodically becomes overwhelmed with such requests which causes short term backlogs.

*Question.* Funds available to Missouri under PL 98-377?

Answer. The law specifies that each state with qualified applicants will be guaranteed one-half of 1 percent of the sum appropriated by Congress. Of the $50 million appropriated in 1984 approximately $225,000 is guaranteed to every state that has qualified applicants.

*Question.* Building surveys undertaken for GSA?

Answer. We work with GSA on a continuing basis to abate asbestos exposure situations at the Federal Building in Kansas City, Missouri. At GSA's request, we have also performed onsite hazard evaluations at the Herbert Hoover Presidential Library and Museum in West Branch, Iowa, and at the Federal Center in St. Louis, Missouri.

*Question.* Other assistance to GSA?

Answer. Evaluation of EPA offices in Federal Buildings in Washington, D.C., New York City, Denver, and Corvalis, as well as EPA offices in Region 7, including the Kansas City, Kansas, Laboratory and warehouse; Jefferson City, Lincoln and Des Moines Field Offices; and the Federal Center warehouse at 607 Hardesty, Kansas City, Missouri.

Three training courses for GSA architects, contract negotiators and employees have been conducted to date. Onsite assistance during emergency situations has been provided at the GSA Regional Office, Kansas City, Missouri.

*Question.* Assistance provided to FAA—particularly at Lambert Field?

Answer. Region 7 evaluation of asbestos firefighter proximity suits for the FAA in Kansas City, Missouri, resulted in the distribution of our advice to the nation's airports and other FAA centers (see attached letters). We provided onsite evaluation of the proposed building expansion at the Air Route Traffic Control Center in Olathe, Kansas and recommendations on asbestos abatement are provided on a continuing basis. These recommendations have national implication because safe asbestos abatement procedures developed for the Olathe Center may be utilized in the other 20 Air Route Traffic Control Centers.

Our involvement at Lambert-St. Louis International Airport has been with the Airport Authority and city officials, but not with the FAA. At least three onsite evaluations of the asbestos ceiling coating on the domes of the terminal building have been conducted to date. Written guidance has been provided as indicated in the attached letters.

*Question.* How many requests for onsite evaluations from commerical building owners?

Answer. We have received 160 requests for onsite evaluations during the past six years.

*Question.* How many of these requests fulfilled?

Answer. All requests from commercial building owners for onsite evaluations have been fulfilled.

*Question.* Schedule for development of standards for determining asbestos hazard and requirements for corrective action in schools and public buildings?

Answer. This question should be directed to Dr. John A. Moore, Assistant Administrator for Pesticides and Toxic Substances, EPA, Washington, D.C. since this is an EPA headquarters function.

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EXHIBIT I

U.S. DEPARTMENT OF TRANSPORTATION,
FEDERAL AVIATION ADMINISTRATION,
*Kansas City, MO, December 19, 1984.*

Mr. WOLFGANG BRANDNER,
*Regional Asbestos Coordinator, Region VII, Environmental Protection Agency, Kansas City, MO.*

DEAR MR. BRANDNER: This letter is a resume of the action taken following your evaluation of the asbestos health hazard imposed on wearers of aluminized asbestos proximity suits.

The tests you had conducted by the Midwest Research Institute, on the asbestos fibers from the coat and trousers, confirmed our suspicions about the suits. As a result of these findings, letters were circulated to all managers of certificated airports in the Central Region warning them of the hazard. They were advised that it was prohibitive to wear the suits and recommended they be replaced with aluminized Nomex or Kevlar proxmity protective clothing, as soon as possible. There were approximately 8 airports where asbestos type fire fighting clothing was found.

At the Airport Inspectors Certification Conference held in Seattle, Washington (September 10 thru 14), copies of your letter citing the asbestos health hazard were disseminated to representatives from all nine F.A.A. Regions. By this action, it is hoped the information will reach all locations and where the type of gear presents a hazard.

It is disturbing to think that these suits have been in use for over 20 years by the military. Equally alarming is the fact that the Neese Enterprises, Inc. of Gonzales, LA, is refurbishing some of these old suits. The asbestos is not encapsulated in the process but left exposed.

In closing, we thank you and the Environmental Protection Agency for the cooperation and assistance rendered in identifying this problem.

Sincerely,

ELMER L. PRICE,
*Airport Certification and Safety Inspector.*

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Kansas City, MO, September 7, 1984.*

MR. ELMER PRICE,
*Airport Certification Inspector, Federal Aviation Administration, Kansas City, MO.*

DEAR MR. PRICE: I recently evaluated several asbestos firefighter proximity suits to determine if they represent a health risk to the wearers. My findings are that the asbestos proximity suits at the Johnson County Industrial Airport near Olathe, Kansas, represents a health hazard to the fire fighters from exposure to asbestos fibers and that such suits should be sealed inside 6 mil plastic bags, labeled with the following information: "CAUTION, CONTAINS ASBESTOS, AVOID OPENING OR BREAKING CONTAINER, BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH" and buried in a sanitary landfill as asbestos waste. I encourage you and the Federal Aviation Administrator to launch a nationwide search for such asbestos proximity suits and have these items removed from service. The remainder of this letter is intended to demonstrate how I arrived at my conclusions.

At your request, I visited the Johnson County Industrial Airport on August 16, 1984, to evaluate the potential release of asbestos fibers from fire fighter's aluminized, proximity suits. Samples of the proximity suit fabric were collected from a coat and trousers. A sample of white debris generated by shaking the proximity suit coat was also collected. These samples were analyzed by Midwest Research Institute, 425 Volker Boulevard, Kansas City, Missouri, utilizing the Environmental Protection Agency's recommended method of analysis, Polarized Light Microscopy with dispersion oil staining. The proximity suit trousers were found to be constructed of 95% chrysotile asbestos and the coat of 90% chrysotile asbestos. The debris form the coat was found to be 90% chrysotile asbestos fibers. These proximity suits are constructed with the raw asbestos fabric on the inside of the suit while outside surface has been aluminized. The suits also contained liners in the helmet, coat and trousers, but these liners did not enclose or seal the asbestos fabric. The wearer of such a proximity suit will be in contact with the exposed asbestos fabric.

To the best of the fire chief's recollection, the proximity suits are approximately 25 years old and were obtained as U.S. Government surplus from Richards-Gebaur Air Force Base in Grandview, Missouri. The Johnson County Insutrial Airport Fire Department aquired 6 trousers, 3 coats, 4 hoods and 6 sets of gloves from this same source. All of these items still had original labels sewn on, indicating the manufacturers of these suits to be: Lite Industries, Inc., King Point Manufacturing Co., and Industrial Safety Specialities Co. The various suit items manufactured by Lite Industries Inc., are labeled as "Fireman's Aluminized Proximity Suit Base Fabric-Asbestos 80%/ Cotton 20%." The Industrial Safety Specialists, Inc. gloves were labeled as "Aluminized Asbestos/Cotton" with a date of 19 April 1965. The Kings Points Manufacturing Company suits were not labeled as containing asbestos, but were found to be constructed of 90% chrysotile asbestos from a fabric sample I had collected. All of these proximity suit items were constructed to government specifications as listed on the labels.

I observed small white fibrous debris on the floor underneath these hung suits. A sample of this fiberous debris was collected and analyzed confirming this debris to be composed of 90% chrysotile asbestos fibers. Since these proximity suits readily release asbestos fibers, they present a health hazard to anyone who comes in contact with them. The medical community has stated the there is no safe exposure level to asbestos. The diseases which are associated with asbestos exposure include asbestosis, lung cancer and mesothelioma (a cancer of the lining of the body organs). The fire fighters who are wearing these proximity suits or are contacting the suits during other activities are being subjected to a known human carcinogen. The exposure to asbestos fibers is totally unnecessary since there are nonasbestos proximity suits available.

The fact that these types of asbestos garments release asbestos fibers is further substantiated by several articles in the scientific literature. I have enclosed three such reports from the British Journal, *Annals of Occupational Hygiene.*

I am also exclosing several slides of these suits for your use at an upcoming national meeting. The aluminized proximity suit is not the only type of asbestos safety garment likely to be found in the nation's fire departments. I have previously encountered a full body coverall including attached hood which was constructed of chrysotile asbestos with an aluminized surfaces on either the outside or the inside of the suit. Slides of this garment labeled as being manufactured by the Mine Safety Appliances Co., are also included for your use.

It is my understanding from corresponding with several of these suit manufacturers, that garments with exposed asbestos fabric are no longer being manufactured. If asbestos is used in proximity suits today, the asbestos is enclosed between two

sheets of a aluminized fabric, thereby preventing any fiber release. The problems we are currently encountering with asbestos proximity suits appears to be a vestige from the past. I hope you can persuade the nation's airport fire departments to remove these hazardous relics.

Sincerely yours,

WOLGANG BRANDNER,
*Regional Asbestos Coordinator.*

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EXHIBIT II

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Kansas City, MO, January 13, 1984.*

MR. KENNETH W. GERLACH,
*Project Architect, Sverdrup & Parcel and Associates, Inc., St. Louis, MO.*

DEAR MR. GERLACH: Enclosed are several asbestos abatement specifications which you may want to use as a guide in developing specifications tailored to the needs of the Lambert-St. Louis International Airport. I have also enclosed a list of contractors willing to bid on asbestos abatement work. Please note the Environmental Protection Agency does not endorse, approve, or recommend any of these contractors nor guarantee their job performance.

As you proceed with a feasibility study designed to find the most appropriate asbestos abatement measures for the St. Louis airport, you may wish to contact: Mr. George Smart, George Smart Architects, 113 North Boylen Avenue, Raleigh, North Carolina 27606-1495 (909) 834-8488.

Mr. Smart has several years of experience in asbestos abatement in multi-story buildings and large structures. He has an expertise in noise control techniques and acoustical engineering as well as extensive experience in the use of encapsulants during asbestos removal. He also has the capability to perform hazard assessment and to develop detailed specifications for unique jobs.

If you would like to learn more about the health hazards of asbestos exposure, evaluating abatement options, etc., a four-day training course on these subjects is being offered at the Atlanta Sheraton Airport Hotel on January 30 through February 2. The meeting coordinator is Tom Corish, telephone number (404) 993-8421, who can describe the courses being offered and the cost involved.

I hope the information I have supplied is useful. Let me know if there is any other help I can provide.

Sincerely yours,

WOLFGANG BRANDNER,
*Regional Asbestos Coordinator.*

Enclosure.

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U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Kansas City, MO, January 4, 1984.*

LEONARD L. GRIGGS, JR.,
*Chairman, Airport Commission, Lambert-St. Louis International Airport, St. Louis, MO.*

DEAR MR. GRIGGS: Within the past month we have received additional test data results from your consultant, Mr. John A. Jurgiel, and from Dr. William B. Hope, City of St. Louis Health Commissioner, concerning asbestos abatement measures proposed for the airport dome ceilings. The data supplied confirms our worst fears:

1. Decadex Firecheck, the selected bridging encapsulant, only penetrated the asbestos-containing material 1 mm, not the required 38.1 mm (1½ inches) to bond the insulation to the substrate;

2. Asbestite 2000, a penetrating encapsulant, only penetrated the asbestos-containing material 8 mm, also not sufficient to rebond the insulation to the substrate;

3. the application of one of the encapsulants, ASBESTITE 2000, resulted in visible "fly off" of the asbestos-containing insulation, obviously resulting in fiber release;

4. the application of encapsulants will result in a significant liberation of fibers as documented by air sampling test data collected on May 26, 1983, and air monitoring data collected on May 1-3, 1979, during the application of a spray coating in low ceiling areas of the airports;

5. three weight hanging tests conducted on December 20, 1983, resulted in one failure indicating that the ceiling insulation in some dome areas does not have the cohesive or adhesive strenght to support the weight of an encapsulant.

These findings, in our opinion, confirm our earlier warnings that encapsulating is not appropriate for the asbestos-containing insulation on the dome ceilings of the Lambert-St. Louis International Airport.

In addition to these findings and the concerns expressed in previous letters, we believe there are other issues you should be aware of which demonstrate the inappropriateness of encapsulation in your particular situation. First, the asbestos-containing insulation on the dome ceiling absorbs up to 80% of the sound that impinges upon it. The encapsulation of this insulation will destroy the absorption of sound and most likely will result in a very loud and noisy airport terminal. The noise may be so great that sound deadening material will have to be installed. Such acoustical material might again be a spray-on product which would have to be applied onto the encapsulated, asbestos-containing insulation. This acoustical treatment would add weight to the encapsulated surface. The final result could be a massive failure of the entire dome coating because the underlying insulation cannot support the added weight.

Second, the proper curing of any encapsulant is temperature-related and most coating or paints have instructions warning against the application of the product if the temperature is below 65°F. We do not know what the temperature is next to the dome ceiling and walls, but are concerned that it may not be warm enough during the winter months when this project is scheduled to be completed. Constant passenger traffic through the terminal doors during this extremely cold winter could result in cold air drafts which would prevent proper curing of any encapsulant. An improperly cured encapsulant may crack, curl, peel, etc., and not prevent fiber release or, in a worst-case situation, patches of encapsulant material may fall to the floor.

Third, our experience and that of several architects throughout the United States has shown that the cost of preparing the work area, isolating it from all other parts of the building for removal, encapsulation or enclosure can cost as much as 40% of the total asbestos abatement project. Current EPA regulations require the removal of all asbestos-containing material, even encapsulated material, before a building is demolished. If 40% of the cost is incurred for work preparation for either removal or encapsulation, why leave the asbestos-containing material in the building for future costs to remove it at the time of renovation or demolition. Leaving the asbestos-containing material in the airport will be a continual drain on your budget. Encapsulation is not a one-time expenditure; instead, it requires continual inspection, repair, and maintenance for the remainder of the useful life of the structure and could possibly require periodic re-encapsulation. Architectural studies have shown that over a 20-year period, a properly maintained encapsulated surface will cost more than removal at today's prices. Encapsulated, asbestos-containing materials also hinder as well as increase the cost of future building modifications which require disturbing the sealed asbestos. For these reasons, the encapsulation of the dome insulation at St. Louis Airport is not cost-effective.

In summation, your own test data reveals the inappropriateness of encapsulating the asbestos-containing insulation on the dome ceilings and walls of the airport terminal building. The issues of future noise control, the possibility of improper curing, and the continual maintenance costs make encapsulation at the airport more a liability than a cure for preventing exposure to asbestos fibers.

Sincerely,

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(For the Director, Air and Waste Management Division).

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U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Kansas City, MO, December 1, 1983.*

Mr. LEONARD L. GRIGGS, Jr.,
*Chairman, Airport Commission, Lambert-St. Louis International Airport, St. Louis, MO.*

DEAR MR. GRIGGS: It has come to my attention that the City of St. Louis Airport Authority intends to encapsulate the asbestos-containing insulation on the dome ceilings of the airport terminal building beginning in January 1984. Public statements have been made that EPA "approved" the proposed encapsulation project. Neither I, nor any member of my staff, have ever "approved" this abatement technique for the St. Louis Airport. The April 25, 1983, letter from Mr. Wolfgang Brandner, EPA Region VII Asbestos Coordinator, to your consultant, Mr. John A. Jurgiel, quite clearly states our concerns and opposition to the proposed abatement project.

On May 2, 1983, Mr. Brandner met with Mr. Jurgiel and Dr. William Hope, Health Commissioner, City of St. Louis, to address our concerns about the asbestos abatement at the airport. An agreement was reached that several types of tests would be conducted before further proceeding with the encapsulation project. To date we have received only the results of the weight hanging test, ASTM Standard Test Method E 736-80. No results of air monitoring during encapsulant application nor encapsulant penetration capabilities have been received. Until these additional test data are supplied, we cannot evaluate the effectiveness of encapsulation in the airport nor condone your abatement efforts.

A preliminary review of the weight hanging test results as described in a June 30, 1983, memorandum for record from Mr. Kenneth W. Gerlach reveals that the tests were not performed properly. The purpose of ASTM Standard Test Method E 736-80 is to determine whether friable asbestos-containing material has sufficient adhesive and cohesive strength to support the weight of an encapsulant. This test is designed to subject the untreated asbestos-containing material to a force of 36 pounds per square foot perpendicular to the surface of the insulation. The June 30 memorandum indicates that the weight in all five tests was hung from an area previously encapsulated. The result of performing this test in this manner is that the perpendicular force applied to the friable asbestos-containing material has been dissipated over a 10 to 12 foot diameter area rather than the 3¼ inch diameter area as specified in the test method. The tests as described did not subject the ceiling insulation to a perpendicular force of 36 pounds per square foot, which is an approximation of the amount of weight an encapsulant might add to a friable material.

We have also received the specifications for applying the encapsulant Decadex Firecheck from the architectural firm Sverdrup & Parcel and Associates, Inc., 801 North 11 Street, St. Louis, Missouri. These specifications have also not been reviewed in detail because the missing test data would have a bearing on the procedures described in this document. A quick overview of the specification identified two points of concern. On page 09800-7 Under the heading "Method of Application" the instructions are to "Vacuum to remove surface dust as necessary." No description is provided for what type of vacuum cleaner is to be used for this purpose. Vacuuming the surface dust from friable, asbestos-containing material with conventional or industrial vacuum cleaners is probably the worst action that could be taken. Such vacuum cleaners would suck asbestos fibers off the ceiling and blow these fibers through the cleaner's exhaust filters into the air. This is worse than if you took no abate action at all. A vacuum cleaner would have to be equipped with a HEPA filter to prevent blowing asbestos fibers into the air, but such a filter would quickly clog if used for the purpose specified.

The second point of concern in the specification is the statement on page 09800-7 that the encapsulant would be applied "to obtain an overall membrane thickness of approximately 40 mils." This dry film thickness of 40 mils is twice the thickness normally used to encapsulate asbestos-containing material with DECADEX FIRECHECK. We do not know why the encapsulant membrane should be 40 mils thick rather than 20 mils but are concerned that the friable insulation may not support the weight of the normal 20 mil thick membrane, much less a membrane twice as heavy.

Again, I wish to emphasize that the purpose for this letter is to alert you to possible problems before they occur. Without sufficient and accurate test data, the decisions you make may create greater asbestos exposure problems in the future. At the current time, with the data so far submitted, we cannot approve or stand silently by as you proceed with your proposed abatement.

Sincerely yours,

DAVID A. WAGONER,
*Director, Air and Waste Management Division.*

Attachment.

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U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Kansas City, MO, April 25, 1983.*

Mr. JOHN A. JURGIEL,
*John A. Jurgiel & Associates, Inc.,*
*Concourse Drive, St. Louis, MO.*

DEAR MR. JURGIEL: I wish I had more time to address the St. Louis Airport asbestos situation, but for the moment I must make my comments brief. I will be out of my office for the next three weeks, but will be passing through St. Louis the evening of May 2, 1983. If you would like to get together on that evening, please

leave word with my secretary. The following concerns are expressed in response to our recent telephone conversation.

The use of Decadex Firecheck as the encapsulating agent for the asbestos-containing ceiling insulation on the terminal building domes is, in my opinion, not appropriate. The Decadex I am familiar with is a bridging sealant. As such it will form a membrane over the top of the asbestos-containing material. Penetration of this encapsulant into the insulation will be minimal. I do not believe the dome coating has sufficient cohesive strength to support the added weight of this encapsulant. I have enclosed a procedure which you might use to test the cohesive and adhesive strength of the ceiling coating. Approximately three years ago, Mr. Bill Mirick of Battelle Laboratories, Columbus, Ohio, and I met with airport officials and discussed the use of encapsulants. At that time, Mr. Mirick was under contract to EPA to evaluate asbestos encapsulating agents. Our conclusion was that encapsulation of the dome coating was feasible, but only with a penetrating encapsulant. Enclosed is a list of over 30 asbestos encapsulants, penetrating as well as bridging. I would encourage you to obtain samples of several of these penetrating encapsulants and apply test patches to the dome ceiling. After curing, a core should be collected of the encapsulated materials and a determination made which encapsulant reattached the insulation to the suspended metal lath.

You are correct in stating that the logistics of preparing the work area are staggering. Both Bill Mirick and I have expressed our opinion that the major problem at the airport is not asbestos abatement, but the erection of protective barriers to prevent asbestos fiber release and contamination of the entire facility during either asbestos removal or encapsulation. The method you proposed with plastic curtains and overnight spraying of the encapsulant is contradictory to all EPA recommendations. Our asbestos abatement guidance for the past four years has always included total isolation of the asbestos work area from the remainder of the building. The size of the airport project and the ongoing interest of the news media in the airport problem will provide much publicity to whatever method of asbestos abatement is chosen. The work you and the airport authority agree upon may well set an example which others will follow. Therefore, I believe it is of the utmost importance for the protection of public health that the St. Louis Airport asbestos abatement project be performed within the guidelines established by EPA four years ago.

I have enclosed a July 1981 encapsulation presentation by Mr. Bill Mirick. In it you will find on pages 10 and 11 the alarming results I mentioned in our telephone conversation. One is the dramatic increase in fiber levels during the encapsulant application and the other is the finding of higher airborne fiber levels seven weeks after encapsulation than before encapsulation was ever begun.

You also mentioned the possibility of installing a ventilation fan into the glass window of the terminal building for the purpose of creating a negative pressure inside the dome during encapsulation. I have reviewed the NESHAPs regulations and find that they only apply in an asbestos removal situation, not during encapsulation. Although these regulations do not address your particular use of a non-HEPA filtered exhaust system, I strongly encourage you not to use such an exhaust system. The potential exists for asbestos fibers to be released to the outside air during encapsulation. All of our efforts have been to contain asbestos fibers, not add more to the environment. I have discussed my objection to this plan with Dr. Bill Hope, Health Commissioner, City of St. Louis. We both share a concern over this proposed ventilation system, but would be willing to discuss it in more detail.

I believe this answers the questions you raised during our conversation. I hope my response will cause all of the involved parties to take a closer look at the proposed asbestos abatement procedures and reevaluate their appropriateness.

Sincerely yours,

WOLFGANG BRANDNER,
*Regional Asbestos Coordinator.*

Mr. YOUNG. Next, Mr. John B. Platt, General Services Administration, Regional Administrator, region 6; accompanied by J. Wayne Roy, Assistant Regional Administrator, Office of Public Buildings and Real Property.

Mr. Platt, the full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

PREPARED STATEMENT OF JOHN B. PLATT

Mr. Chairman, Members of the Committee, I am John Platt, the Regional Administrator for the General Services Administration, Region 6. I appreciate the opportunity to appear before your Committee this morning. I would like to introduce Wayne Roy, Assistant Regional Administrator, Office of Public Buildings and Real Property, and Jack Smith, Chief of the Accident and Fire Prevention Branch, in the Office of Public Buildings and Real Property.

The General Services Administration, Region 6, includes the states of Missouri, Iowa, Nebraska and Kansas. Among our principal duties is serving in the function of building owner. In that regard, our basic responsibility is to provide a safe and healthful environment for Federal employees and the public within our Federal buildings. Within the Region 6 area, GSA houses approximately 48,900 Federal employees. These employees are housed in 371 locations, being 119 Federally-owned buildings and 252 leased locations. In the St. Louis, Missouri, area, we house approximately 17,600 Federal employees in 28 Federally-owned buildings and 28 leased locations.

The Office of Public Buildings and Real Property in the region and the Public Buildings Service in our Central Office in Washington, DC, are responsible for the day-to-day operation of these buildings. As such, the Public Buildings Service is concerned with all details regarding day-to-day operations. This would include the area to be discussed in today's hearing, the question of asbestos abatement.

In the area of asbestos abatement, we in Region 6 have reacted to the strong emphasis this program has received nationally. GSA is committed to a strong containment/removal program. GSA, in this area of concern as in others, has directed intense management effort be taken to ensure our buildings are totally safe with regard to asbestos, as we are committed to total safety in other safety and health factors.

GSA's program started in the 1970's and resulted in a formal control program in 1979. Our building inventory was surveyed in 1980–1982 and in this region, of our Federally-owned inventory of 119 buildings, we found 96 buildings contained some form of asbestos. Twenty-three of these buildings are support buildings, such as transformer vaults, meter house buildings, etc., which are generally unoccupied and only entered occasionally and then by GSA employees. This inventory looked for two basic conditions. We were looking for pipe lagging, which is the insulation around pipes around which canvass is wrapped or sprayed on fireproofing, or insulation of structured members. Of the 96 buildings containing some asbestos in the region, 3 have some form of friable condition to a degree which would put the building on the GSA national priority list. These three buildings are: Federal Building, 601 East 12th Street, Kansas City, Missouri; Federal Building/U.S. Post Office/Courthouse, 215 North 17th Street, Omaha, Nebraska; and Herbert Hoover Library, 210 South Downey, West Branch, Iowa.

Region 6 has completed asbestos removal projects in the region at the following 6 locations:

1. Federal Records Center, Building 100, 9700 Page Boulevard, St. Louis, Missouri—Removal of 1,500 square feet of asbestos containing soundproofing from an air-conditioning equipment room on the first floor was completed in 1981.

2. U.S. Courthouse, 401 North Market, Wichita, Kansas—Removal of 4,616 square feet of asbestos containing soundproofing from walls and ceiling of a U.S. Judge's chamber and courtroom on the fourth floor was completed in May 1984.

3. Federal Building/U.S. Post Office/Courthouse, 215 North 17th Street, Omaha, Nebraska—Removal of 2,198 square feet of asbestos containing plaster ceiling from two courtrooms on the ninth floor was completed in June 1984.

4. Federal Center, 4300 Goodfellow, St. Louis, Missouri—Removal of old piping systems with asbestos containing insulation was accomplished during complete renovation projects for 11 buildings at this location during the period from 1970 to present.

5. Federal Building No. 1, 1500 East Bannister Road, Kansas City, Missouri—Removal of old piping with asbestos containing insulation from a 50,000 square foot portion of the warehouse was completed in July 1984.

6. Federal Building, 1500 East Bannister Road, Kansas City, Missouri—A project to remove all abandoned piping with asbestos containing insulation in the 90,000 square foot GK–2 warehouse portion of the building was completed in May 1984.

Region 6 has asbestos removal projects currently under construction at the following locations:

1. Federal Building, 601 East 12th Street, Kansas City, Missouri—Removal of sprayed on asbestos containing fireproofing from the structural metal decking (ceil-

ing) of the third floor annex section of the building, approximately 25,000 square feet. Estimated completion date is December 31, 1984.

2. Federal Building, 2306 East Bannister Road, Kansas City, Missouri—Removal of asbestos containing insulation from two air handling units located in a mechanical equipment room of this building is estimated to be completed in March 1985.

3. Federal Center, 4300 Goodfellow, St. Louis, Missouri—A project is currently under construction to renovate Building 104F, containing 13,246 square feet of space. Included in this project is removal of all piping insulated with asbestos containing materials. Estimated completion of this project is January 1985; however, piping removal portion has already been completed.

Region 6 has asbestos related projects to be completed in future years as follows:

1. Herbert Hoover Library, 219 South Downey, West Branch, Iowa—A project to remove sprayed on asbestos containing fireproofing from structural metal support beams on second floor and attic portion of the building is scheduled to be accomplished in FY 85. Access to the area is restricted and air sampling is conducted twice a year to monitor friable asbestos exposures. Laboratory results indicate no hazardous concentrations.

2. Federal Center, 4300 Goodfellow, St. Louis, Missouri—Buildings 110 and 104 are awaiting prospectus approval for complete modernization. Included in these projects is removal of old piping with asbestos containing insulation. Project construction years are FY 86 and FY 87, respectively.

3. Federal Building, 412 South Main, Wichita, Kansas—A project to encapsulate approximately 70,000 square feet of asbestos containing ceiling plaster on both floors is scheduled for accomplishment in FY 89. Estimated cost is $232,100.

4. Federal Building/U.S. Post Office/Courthouse, 215 North 17th Street, Omaha, Nebraska—A project to encapsulate approximately 197,953 square feet of asbestos containing ceiling plaster throughout this 10-story building is scheduled for accomplishment in FY 89. Estimated cost is $554,900.

5. Federal Building, 601 East 12th Street, Kansas City, Missouri—This building has sprayed on asbestos containing fireproofing material on all floors of the building. Working with safety and health professionals from NIOSH and EPA, it has been determined that no removal or encapsulation project throughout the building is required and that alterations in this building will be accomplished as follows:

Tenant agencies occupying space where alterations take place will be advised and all necessary safeguards provided. Any areas where asbestos is disturbed will be sealed and ceiling tiles in the immediate area cleaned with HEPA vacuum cleaners to remove particles and dust. Workmen shall wear respirators and protective clothing when asbestos surfaces are to be disturbed. Work which requires disturbance of asbestos will be done on evenings or weekends when area is unoccupied. Work areas shall be sealed from other work areas when necessary. We will continue to maintain an intense monitoring system at this location.

Region 6 has reacted to three reported incidents regarding asbestos in the last year. Investigation revealed that one incident was unfounded and testing revealed no basis for alarm. Another incident occurred in the warehouse area of the Federal Building, 1500 East Bannister Road, Kansas City, Missouri. The contractor involved was instructed to clean up the debris using required protective measures for asbestos material. The last incident occurred at the Federal Building, 601 East 12th Street, Kansas City, Missouri. It was discovered during a roofing project that some fireproofing material had become dislodged and flaking and particles were in the air as a result. The project was halted, the area evacuated and appropriate cleanup measures were taken and removal of the sprayed on material will be completed before the area is reoccupied.

We are proud of the Region 6 activity in the asbestos abatement area and feel we have been responsive in complying with current guidelines and in providing a safe work place for Government employees.

We will be pleased to answer any questions you may have.

Mr. YOUNG. Please proceed.

**TESTIMONY OF JOHN B. PLATT, REGIONAL ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION, REGION NO. 6, ACCOMPANIED BY J. WAYNE ROY, ASSISTANT REGIONAL ADMINISTRATOR, OFFICE OF PUBLIC BUILDINGS AND REAL PROPERTY AND JACK SMITH, CHIEF OF THE ACCIDENT AND FIRE PREVENTION BRANCH, OFFICE OF PUBLIC BUILDINGS AND REAL PROPERTY**

Mr. PLATT. Mr. Chairman, members, guests, as the chairman already introduced me, I am Regional Administrator for the General Services Administration, region 6. The EPA region is region 7. We have different regions. That is the confusion.

I appreciate the——

Mr. YOUNG. That helps confuse everything a little bit, too, doesn't it?

Mr. PLATT. Well, yes, we are all——

Mr. YOUNG. We are all working together.

Mr. PLATT. That is right.

I appreciate the opportunity to appear. I would like to introduce Wayne Roy on my left, Assistant Regional Administrator of the General Services Administration, Offices of Public Buildings and Real Property. On my right is Jack Smith, Chief of the Accident and Fire Prevention Branch in the Office of Public Buildings and Real Property.

Our region, region 6 of the GSA, includes the States of Missouri, Iowa, Nebraska, and Kansas.

My statement was submitted to you and I propose to summarize it. I need to comment first in the area of asbestos abatement. We in region 6 have responded to the strong emphasis this program has received nationally.

GSA is committed to a strong containment/removal program. GSA in this area of concern, as in others, has directed intense management effort to be taken to ensure our buildings are totally safe with regard to asbestos, just as we are committed to all other safety and health factors.

GSA's program started in the 1970's and resulted in a formal control program in 1979. Our building inventory was surveyed in 1980–82, and in this region, of our federally owned inventory of 119 buildings, we found 96 buildings contained some form of asbestos; 23 of these buildings are support buildings, such as transformer vaults, meter house buildings, et cetera, which are generally unoccupied and only entered occasionally, and when they are, they are handled by employees who are prepared to take whatever emergency action is necessary.

Of the 96 buildings containing some asbestos in the region, 3 have some form of friable condition to a degree which would put the building on the GSA national priority list.

These three buildings are: Federal Building, 601 East 12th Street, Kansas City, MO; Federal Building/U.S. Post Office/Courthouse, 215 North 17th Street, Omaha, NE; and Herbert Hoover Library, 210 South Downey, West Branch, IA.

Region 6 has completed asbestos removal projects in the region at the following six locations:

One: Federal Records Center, Building 100, 9700 Page Boulevard, St. Louis, MO, removal of 1,500 square feet of asbestos containing soundproofing from an air-conditioning equipment room on the first floor was completed in 1981.

Two: U.S. Courthouse, 401 North Market, Wichita, KS, removal of 4,616 square feet of asbestos containing soundproofing from walls and ceiling of a U.S. judge's chamber and courtroom on the fourth floor was completed in May 1984.

Three: Federal Building/U.S. Post Office/Courthouse, 215 North 17th Street, Omaha, NE, removal of 2,198 square feet of asbestos containing plaster ceiling from two courtrooms on the ninth floor was completed in June 1984.

Four: Federal Center, 4300 Goodfellow, St. Louis, MO, removal of old piping systems with asbestos containing insulation was accomplished during complete renovation projects for 11 buildings at this location during the period from 1970 to present.

So, in 11 buildings, we have accomplished that.

Five, Federal Building No. 1, 1500 East Bannister Road, Kansas City, that removal of old piping was completed in July 1984.

Six, the Federal Building also at 1500 East Bannister Road, Kansas City, we have a GK-2 warehouse portion of the building that was completed in May 1984.

Our asbestos removal project in this region, we have some currently under construction at the following locations: the Federal Building at 601 East 12th Street in Kansas City, the third floor and, next, there we have this building completion date for the end of this year, December 1984.

The Federal Building at 2306 East Bannister Road, we have more asbestos removal and two air-handling areas to be completed March 1985.

The Federal Center here at 4300 Goodfellow, we are renovating building 104-F and we estimate completion of that in January 1985.

The bright spot is all the piping has been removed from that building. We have asbestos-related projects which are to be completed in future years, the Hoover Library in West Branch, again, to remove sprayed on asbestos in the second floor of the attic portion. This is scheduled to be accomplished in fiscal 1985.

This area is restricted and the air sampling is being conducted twice a year. Laboratory results indicate no hazardous concentrations.

Here at 4300 Goodfellow, the Federal Center, St. Louis, the building is 110, and the rest of the building 104 are awaiting prospectus approval.

Included in the projects is removal of old piping and constructions years are scheduled for fiscal year 1986 and fiscal year 1987, respectively.

The Federal Building in Wichita, 412 South Main, we have a project to encapsulate tile and so on scheduled for fiscal year 1989.

The Federal Building/Post Office/Courthouse in Omaha, we have a project to encapsulate there throughout the 10-story building, and that is scheduled to be accomplished by 1989—fiscal year 1989.

The Federal Building at 801 East 12th Street in Kansas City, this building, in addition to the annex we talked about, has sprayed-on asbestos containing fireproofing in all floors of the building.

We have been working with the safety and health professionals from National Institute of Occupational Safety and Health [NIOSH], and the EPA, to determine that no removal or encapsulation in the building is required, and the alterations in this building will be accomplished as follows:

First of all, we will notify all tenant agencies so that all necessary safeguards will be provided. Any areas where the asbestos will be disturbed, it will be sealed and ceiling tiles will be cleaned with help of a vacuum cleaner to remove the particles and dust.

The workmen will wear respirators and protective clothing. Work which requires the disturbance of asbestos will be done on the evenings or weekends when the area is unoccupied.

These work areas will be sealed from the other work areas when necessary. We, of course, will continue to maintain an intensive monitoring system at this location.

Region 6 has reacted to three reported incidents regarding asbestos in the last year. Investigation revealed that one incident was unfounded and testing revealed no basis for alarm.

Another incident occurred in the warehouse area of the Federal Building, 1500 East Bannister Road, Kansas City, MO. The contractor involved was instructed to clean up the debris using required protective measures for asbestos material.

The last incident occurred at the Federal Building, 601 East 12th Street, Kansas City, MO. It was discovered during a roofing project that some fireproofing material had become dislodged and flaking and particles were in the air as a result.

The project was halted, the area evacuated and appropriate cleanup measures were taken and removal of the sprayed-on material will be completed before the area is reoccupied.

We in region 6 feel very proud that we have been responsive in the abatement area in complying with current guidelines and providing a safe workplace for Government employees, and of course, the public who come in.

We are pleased to answer any questions you may have.

Mr. YOUNG. Thank you, Mr. Platt, for your fine statement.

I guess one building right off the top of my head would be the one in Omaha, the 10-story building for fiscal year 1989.

Mr. PLATT. Yes, sir.

Mr. YOUNG. That doesn't seem like a tremendous amount of money, you know, why not try to move that up prioritywise a little from 1989? That gives us 1985, 1986, 1987, 1988, then 1989.

Mr. PLATT. I think that is a very good suggestion, Mr. Chairman. We will certainly look into it, and see what can be done.

Mr. YOUNG. We will try to follow up with you, if we can be of any help.

Mr. PLATT. Yes; fine.

Mr. YOUNG. What funding level in region 6 do you feel is necessary for fiscal year 1986 for asbestos abatement in 1986?

Mr. PLATT. For our region, sir?

Mr. YOUNG. Yes, sir; and, further, what amounts would be necessary to remove asbestos totally from all the buildings that you have identified?

Mr. PLATT. I would prefer to accumulate that for you, Mr. Chairman.

Mr. YOUNG. You are shortly—yes, you are working on the 1986 submissions now.

Mr. ROY. Yes.

Mr. PLATT. Yes, we are.

Mr. YOUNG. Fine.

When did GSA region 6 inspect all buildings within your inventory, and will GSA do a reinspection on an annual or 5-year basis?

Mr. PLATT. We did an inspection from 1980 through 1982. Of course, reoccurring inspections have been identified for 96 federally owned buildings where all the asbestos is located.

We will, of course, monitor and check all these.

Mr. YOUNG. Incidentally, I have not seen this building mentioned. Does Mr. Roy know specifically about this one?

Mr. ROY. As part of the prospectus project which the committee has approved——

Mr. YOUNG. Abatement is in there?

Mr. ROY. Yes, Mr. Young, we have abatement in there. We have no friable condition here, but we will be removing some ductwork which is covered with asbestos, and wrapped. That will come out as part of the project.

Mr. YOUNG. All right.

Mr. Platt, would you describe the involvement of the regional GSA office in asbestos detection and abatement in public buildings? Do you assist in selecting contractors for detection and abatement?

If so, what qualifications or certifications do you require?

Mr. PLATT. Our involvement is, of course, very heavy in it, and we certainly do assist the contractors in detection and abatement. That is handled by our Design and Construction Division. They work closely with the other agencies involved, EPA and so on, for regulations.

The qualification and certification you refer to, they must have had experience and be in asbestos-removal projects before they will be allowed to bid on the projects, and also to perform them.

Mr. YOUNG. The earlier part of my statement suggested some problems that we had found in a place or two. How do you handle that out of your region as far as the removal of the material from a project?

I am sure you don't let them flush it down the toilet.

Mr. PLATT. Oh, no, no; we instruct, and have requirements set up first in the contracts that we issue, specifying exactly how this removal is to be handled, what they are to do with anything they collect from it.

I mentioned the help of vacuum cleaners. We instruct them in the proper way to dispose of the contents of those. Then, to carry them out of the building, they are just not carried on an open truck they are not dragged through the building unguarded or uncovered.

They are totally contained, because we are thoroughly conscious and very concerned about the possibility of some of this getting out

once we have gone to work to remove it. We don't want to spread it, of course.

Mr. YOUNG. As I am sure you are aware, asbestos was discovered and action was taken at the Pernell Records Center in Overland. We will receive testimony later this morning which raises some concern about the communication between GSA, and the contractor, and the employees at the center during abatement activity.

Can you tell us whether employees were notified in advance that the abatement would take place and when it would be done; were they asked to take any precautions; was the time and manner of the abatement action specified with the contractor in advance; was an industrial hygienist present to supervise; and where was the asbestos disposed of after removal?

There are about six questions there, I don't know if you have had an opportunity to have those posed to you other than with my reading of that statement.

Why don't we try it on the records center.

Mr. PLATT. The first—this was a steam piping modification at the Federal Records Center. With that type of project, there is no need to notify the employees, and the reason for that is we had planned to do it after duty hours.

The contractor was certainly aware of the precautions that he needed to take; however, since it was to be empty at the time, the employees were not notified. I think we had an overeager contractor who showed up and started posting signs and all dressed up in his precautionary suit, and that caused some concern, which is very reasonable.

Mr. YOUNG. Somebody got all shook up, I guess, for sure?

Mr. PLATT. I can understand that. I think we share that concern.

Mr. YOUNG. How did the contractor handle this after the project was started? Do you know of any hygienist being available, present to supervise the operation?

Mr. PLATT. This was going to be done—I can have Jack Smith amplify on it—but this is to be done by what they call the glove and the bag method of removal, which Jack can identify further, if you like, as far as the method is concerned.

With that type of removal situation, there is no need to have a hygienist present, and so can a piping thing—but we would have had, if there was what we call an asbestos removal project like some others, there certainly would be a hygienist present when you are taking it and putting it in a bag.

That is normally not required and necessary to protect the health of the workers or the employees.

Mr. YOUNG. How was removal of the asbestos handled?

Mr. PLATT. The guidelines we have for removal call for it to be in an approved landfill design to accept that type of product.

Mr. YOUNG. How is it packaged? I wonder if anybody, maybe another witness would know, what would be an approved landfill for that type of material?

The only one I think would be Bob's landfill out in Warrington, I believe. Can anybody tell us how it is disposed of, what sort of bag, Mr. Smith?

Mr. PLATT. Mr. Smith could answer that.

Mr. SMITH. EPA guidelines call for it to be enclosed in a 5-mil polyester bag.

Mr. YOUNG. Five mil, about five times what we might have in our garbage cans.

Mr. SMITH. Yes.

Mr. YOUNG. That is fairly thick, then, isn't it?

Mr. SMITH. Yes, it is.

Mr. YOUNG. Would it be put in a landfill like——

Mr. SMITH. Do you mean would it be a landfill like a city dump that has been notified and authorized to accept hazardous materials?

Mr. YOUNG. Not necessarily permitted, I guess really would be my question. You are not aware of—or are you aware of what type of landfill the contractor would be required to dispose of this material in?

Mr. PLATT. I am not, Mr. Chairman, I am not aware of the specific requirements on that.

Mr. YOUNG. You are not aware under the law, is that your impression?

Mr. ROY. No.

Mr. PLATT. Maybe I am not understanding the question.

Mr. YOUNG. Maybe I am not posing the question properly.

Where did the material come from, say, the records center in Overland, where might that have been disposed of? Could we get an answer for that?

Mr. ROY. We will get it for you.

Mr. PLATT. We can get you that information.

Mr. YOUNG. The problem I have had, in the 8 years I have been a Member of the Congress and as a member of the Missouri Senate, just trying to locate where some of this material is from, the uranium-235 in creation of the atomic bomb of the Manhattan Project here at Malincott, and trying to find out where it has all gone to, nobody seemed to be concerned for years and years and years—that is not fair—but it has been spread around like Dolly Levy.

It has been spread around all over the place. We are having a terrible time trying to keep hazardous substances located. Just shortly ago, at Times Beach, the Missouri State Highway Department came in and started moving dirt out of Times Beach.

Can you imagine anybody letting anybody in Times Beach with the dioxin contaminated soil and our own State highway department taking it out?

I haven't had a chance to follow that one through, but it just didn't seem to make any sense to me.

So I am sure that certainly somebody is going to say, where did the asbestos go, and I sure wouldn't like to maybe start finding out. Further, if it is going to an approved hazardous waste site, I think Bob's would be the only one in the State, and I am not sure they have not lost their permit to accept that.

So that is a question the staff will follow up on.

Mr. PLATT. We will certainly verify that.

Mr. YOUNG. You understand what I am saying, if we are going to address this in the future, we ought to follow that up a little and see what or where it is going. I don't know if we asked that question before.

We might have asked that question in Washington. But I think it is something we all ought to be thinking about because the public is really concerned.

Mr. PLATT. Yes.

Mr. YOUNG. Mr. Roy.

Mr. ROY. We will, for the record, get you a list of those hazardous waste sites that we can use and of course, it is our understanding that anything that would exceed 1 percent requires that special hazardous waste site.

Mr. YOUNG. That would be great.

I think it would be helpful if maybe the other committees who have jurisdiction over this situation, maybe we can get those together and hopefully we can have a joint hearing and get started on that.

You have proposed a major renovation at the Mark Building in St. Louis. Is there asbestos present in that building? Is asbestos present in any other public building in St. Louis, and if so, what are your plans for abating the problem in any of these buildings in the near future?

Mr. PLATT. In answer, Mr. Chairman, yes, there is asbestos present in the Mark Building, and there is asbestos present in other public buildings in St. Louis, and these asbestos are in the pipe lagging, the pipe that is wrapped up, been painted over and covered over.

Of course, our plans, what we are doing is when we go in any renovation or any restoration or any activity there, anything that may cause or possibly cause any disturbance to that pipelining insulation with it, we do conduct removal and replacement thereof with other insulating material if necessary.

Mr. YOUNG. I am the culprit, I have hung a few pieces of pipe over there in the Mark Building.

Mr. ROY. We weren't going to bring that up.

Mr. YOUNG. But I did.

Has region 6 discovered friable asbestos in GSA-leased facilities, and if so, who is responsible for the abatement of that substance as it relates to leased facilities?

Mr. PLATT. In the leased buildings, the responsibility is with the lessor, that is part of the condition of the lease. They are required to take care of that. We do, of course, check with them, check it, we are also concerned with the leased areas.

Mr. YOUNG. Do you have authority to follow up?

Mr. PLATT. Certainly, that is part of contract administration. That is our direct responsibility, to make sure they do follow the terms of the lease.

Mr. YOUNG. OK.

Mr. PLATT. Yes.

Mr. ROY. Which require meeting local codes.

Mr. YOUNG. I don't have anything further. Mr. Smith, Mr. Roy, and Mr. Platt, I appreciate your appearance here today to help us try to get moving a little further down the road to try to correct what is apparently a very serious problem.

Thank you very much.

Mr. ROY. Thank you.

Mr. PLATT. Thank you, Mr. Chairman.

Mr. SMITH. Thank you.

Mr. YOUNG. Mr. Stodghill has an early commitment and I would appreciate it if Mr. William Stodghill, the international vice president and president of the Local 50 Service Employees International Union, St. Louis, MO, would come forward.

Would you care to proceed, Bill.

The full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

[Press release from Service Employees International Union, AFL-CIO, CLC]

SERVICE EMPLOYEES UNION VICE PRESIDENT TELLS HOUSE SUBCOMMITTEE EPA NOT ACTING ON ASBESTOS IN SCHOOLS

ST. LOUIS, MO, October 22.—William Stodghill, Vice President of the 850,000 member Service Employees International Union, and President of SEIU Local 50, today told a U.S. House of Representatives subcommittee asbestos in the nation's schools is a "hazard many believe will kill more children than polio" and said the Environmental Protection Agency has "transformed a very bad situation into an environmental catastrophe" by alarming schools about asbestos, without providing regulations requiring safe removal or worker, student and teacher protections.

"Nature has played a dirty trick on us by not producing highly visible paralyzed children to motivate our Federal government to act," Stodghill told the Public Buildings and Grounds Subcommittee of the House Public Works and Transportation Committee.

"Instead we must wait 20-30 years for the body count because asbestos-related disease takes so long to develop."

Saying "our nation is counting bodies" among school employee members, Stodghill said parents have been threatened with jail for removing their children from "asbestos-ridden" schools, teachers have resigned in protest and school workers forced to remove asbestos without proper protection and equipment.

"Asbestos abatement contractors are having a field day," he said, noting that in may cases the material is being removed and disposed of haphazardly.

"Removal contractors and workers are flushing asbestos down toilets, potentially contaminating water supplies, and even taking asbestos materials away in private cars," he stated, noting that many schools across the country were unable to open last month because of asbestos contamination.

Stodghill asked the subcommittee, which has oversight responsibilities pertaining to public buildings, to force the EPA to promulgate new standards for asbestos abatement as well as regulations protecting workers, children, and teachers during abatement proceedings. He said his union has filed suit in U.S. District Court to force the EPA to act.

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PREPARED STATEMENT OF WILLIAM STODGHILL

Mr. Chairman and members of the House Public Buildings and Grounds Subcommittee, I am William Stodghill, International Vice President of the Service Employees International Union and President of SEIU Local 50 based here in St. Louis. The Service Employees International Union represents 850,000 members, with over one-third employed as building service and maintenance workers in schools and other buildings. We thank you for this opportunity to present our Union's views on the national public health tragedy posed by asbestos in our schools. It is a hazard many believe will kill more children than polio—except that nature has played a dirty trick on us by not producing highly visible paralyzed children in wheelchairs to motivate our Federal government to act. Instead, we must wait 20-30 years for the asbestos body count--a hazard that still largely exists seven years after it was first discovered because of one of the worst cases of government mafeasance in our nation's history.

Our union first became concerned about the asbestos in schools problem when it was brought to our attention by our members—members that believe they are suffering a lung disease epidemic. We commissioned the first nationwide study finding over three million children and 650,000 school workers potentially at risk—a figure that EPA recently confirmed is five times higher in a report that has yet to be released. We produced educational brochures for our members, we met and met again

with EPA, we commissioned the first study of state legislation—concluding that this piece meal approach will virtually assure that asbestos hazards will remain in our schools for decades to come. We established a technical advisory task force that developed a set of minimum provisions that EPA should adopt to address the asbestos in schools situation. Finally, as a last resort—we have been forced to take legal steps to protect our children and members which I will detail in a moment.

Mr. Chairman and Committee members. Do you realize what is happening across this country as I speak?

Our union is counting bodies, bodies of workers that have died from asbestos related disease that never worked a day of their lives outside a school. Cases of mesothelioma and asbestosis among teachers and other school workers, even a Catholic school nun with her only occupational exposure to asbestos being traced back to the school where they worked. The San Francisco Occupational Health Clinic will tell you that the worst case of asbestosis they have yet diagnosed was found not among a shipworker but a school worker.

Parents have been threatened with incarceration for removing their children from asbestos ridden schools. They have boycotted schools. Cases of parents being physically thrown out of schools for bringing asbestos hazards to the attention of school officials has been reported. Other parents have spent hundreds and thousands of dollars and hundreds of hours fighting school boards and organizing parent groups to get asbestos hazards abated—achieving mixed results.

Building Maintenance Workers are being forced to remove asbestos from schools without the benefit of respirators or other protective equipment. Other workers have been fired from complaining about asbestos hazards.

Teachers are resigning in protest when schools refuse to abate obvious asbestos hazards.

Schools are claiming full compliance with existing EPA regulations while children eat lunch under crumbling asbestos ceilings.

Elementary school children have been reported renovating a classroom as part of a semester long construction project with neither the teacher nor students aware that the white substance falling while they drilled holes in the ceiling was asbestos—even though the school superintendent was aware of this fact three years earlier.

Asbestos abatement contractors are having a field day. Workers are flushing asbestos down toilets, potentially contaminating city water supplies. Others have been observed transporting asbestos away in their private automobiles and using other improper disposal methods. Reputable contractors claim that 80 percent of all asbestos abatement work, is being conducted improperly leaving schools and other buildings more contaminated than if the asbestos was never touched.

Schools across New Jersey were unable to open last September after abatement work because the State Health Department is unable to verify in time that asbestos air levels are down to 100,000 fibers per cublic meter of air—even though this is a level that few experts would claim is safe.

Millions of dollars are being wasted in removing materials that were later found not to present a friable asbestos hazard. Millions more are being wasted on encapsulants, perhaps the most widely used method to abate asbestos hazards, even though these prouducts were never developed to be used on asbestos with many of the manufacturer's explicitly stating that this is an unintended use of their product and that they will not be held liable due to the high unreliability of their encapsulants for this purpose.

Experts predict that in 20-30 years, thousands will die every year as a result of asbestos exposures they received while in school. This estimate is based largely on data available since 1965 showing asbestos workers' family members dying from the extremely low levels of asbestos brought home on the workers' clothes.

Let's briefly look at EPA's actions since they first declared that asbestos in schools posed a significant public health threat over seven years ago. Under the Carter Administration, EPA proposed an inspection and abatement rule to be issued in two parts. The final inspection part of the rule wasn't released until almost two years later in May of 1982 with EPA Program Managers concerning that there was little activity on the rulemaking since the change in administration. In fact, they stated that the final regulation was virtually identical, except for a few minor changes, to the proposed rule. In April 1981, four months into office, the Reagan Administration abandoned the second half and most important part of the rulemaking—the abatement rule. Instead, EPA decided to rely on educational efforts to get schools to abate asbestos hazards. However, their own internal report of December 1983 was concluded that "little abatement activity has been undertaken," and "the lack of an abatement requirement . . . has resulted in a reluctance . . . to under-

take abatement projects," and "quality control in abatement is lacking due to the lack of standards for contractors and inadequate oversite of contract work."

Under increasing pressure from labor unions and educational groups, the EPA takes the worst possible approach and begins finding schools in January 1984 for failure to comply with the inspection rule—resulting in mass hysteria across the country among parents, teachers, children, and other school workers. Since the agency has yet to issue companion standards defining what constitutes an asbestos hazard in schools, nor standards requiring that hazardous asbestos be abated, nor standards detailing how abatement work should be conducted—in many schools no abatement activity occurs. However, even more alarming is the amount of asbestos abatement work that schools are conducting improperly because EPA has not issued asbestos abatement contractor standards leaving schools across the country more highly contaminated than if the asbestos was never touched. The result has been that EPA has transformed a very bad situation into an environmental catastrophe.

Now the EPA is again announcing new steps that it will take to address this seven year old problem. The EPA will proudly tell you it plans to administer the Asbestos School Hazard Abatement Act of 1984. What the agency fails to mention is that Congress, not EPA felt the need to enact this grant and loan program. In fact, initially, Mr. Ruckelshaus actively lobbied up on Capitol Hill to stop development of the Act. The Act requires some worker protection and contractor safety provisions—these rules will only apply to the schools that receive part of the 50 million dollars in funding. Since new estimates claim the asbestos in schools problem will cost 30 to 40 billion dollars, this means that the vast majority of asbestos abatement work will not receive federal funds—thus consequently these workers will not have legal safety and health protections nor will there be assurances that these abatement contractors will be competent. Worse yet, the EPA stated that they will try to kill this program, designed to last seven years, by not seeking funds next year. Second, the EPA is proposing contractor certification language that states could voluntarily adopt. Unfortunately, without requiring that contractor certification is established, it is naive to think that many voluntary programs will be established. Third, the agency is proposing to develop pilot information centers. However, we are unclear as to how this effort is different than what the agency has been doing for the past five years. The bottom line, Mr. Chairman, being that you can educate parents, teachers, and other school workers until you are blue in the face about asbestos in schools hazards. But until these groups have a legal right to demand that asbestos hazards get abated in a safe manner—just as children are legally required to attend schools—simply establishing information centers will virtually assure the presence of asbestos hazards in schools or that the hazard will be abated unsafely. Fourth, the agency is again talking about releasing hazard guidelines—something the agency has already done and released in a document released in March of 1983. Fifth and finally, the agency is proposing a periodic re-inspection program—apparently to cause periodic hysteria among school workers, teachers, and parents to indirectly assure that more haphazard abatement work is to be conducted.

Quite frankly, we, along with millions of parents, teachers, and other school workers—and their respective organizations are not naive enough to believe that EPA's new proposals begin to adequately address the asbestos in schools problem. We are outraged, exhausted, and frustrated. What else can we do? When Congress created the EPA, the Agency's mission was to act on sound scientific information to protect the public's health. We have reached a new era where the Agency is essentially immune from taking action—no matter how serious the environmental threat nor how loud the public outcry.

That is why last November we petitioned the agency under the Toxic Substances Control Act, which legally requires the agency to regulate significant public health threats such as the threat to issue rules that would require that the agency establish rules defining what constitutes hazardous asbestos, regulations that require abatement once asbestos is found to be hazardous, and most importantly that the abatement work be conducted in a safe and complete manner. Claiming to have granted our petition last February, the agency proceeded to hold public hearings and collect comments. To get a sense of the overwhelming desperation and fear and frustration felt by parents, teachers and other school workers, I would refer you to the testimony presented at these hearings—we have highlighted some of the most striking excerpts which I have attached to this testimony. To make a long story short, we have been meeting with, and talking with EPA for over a month for the agency to simply supply us with a timetable to tell us when they will respond one way or the other to the demands of our November 1983 petition—the petition that they claimed to have granted. Therefore, last week on September 11, we felt that we were left with no other choice but to file suit in U.S. District Court to force EPA to

give us a timetable. Unfortunately, even if we are successful—and I believe we will be—we will have to wait many long years while asbestos fibers are allowed to continue to accumulate in the lungs of our future victims.

In conclusion, I would like to read a paragraph from the testimony delivered at one of the EPA asbestos hearings by Mrs. Bobby Nichtow, a concerned parent from Evanston, Illinois. Her testimony reads:

"I have two daughters, ages 2 and 5. Our family was emotionally devastated. The tension was incredible while I campaigned before the two critical school board meetings. I spent four hours every day and occasionally ten hours for two to three months. I also spent over $500. Please, don't expect parents to do your job. Especially when the EPA could do it so much more quickly and properly. The enormous amount of work I did could have been accomplished by one simple phone call or letter from the EPA saying you're required to clean up the asbestos and you're required to to do it in a safe manner! There must be government regulations."

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BACKGROUND INFORMATION ON EPA REGARDING ASBESTOS IN SCHOOLS, FURNISHED BY SERVICE EMPLOYEES INTERNATIONAL UNION, AFL-CIO, CLC

1977—EPA first identified asbestos as a significant public health threat in a school in Howell Township, New Jersey.

September 1979—Under Carter, EPA claims voluntary efforts not working and announces an inspection and abatement rule will be issued in two parts.

September 1980—EPA releases proposed inspection rule, but Reagan takes office and stalls final rule until May 1982. EPA program managers in charge concede "there was little activity on the rulemaking since the change in administration. In fact, the final regulation was virtually identical, except for a few minor changes, to the proposed rule" (GAO report).

April 1981—Under Reagan, "the second part of the rulemaking plan to address abatement is abandoned" (GAO report).

March 1983—Service Employees International Union (SEIU) locals perceive a high rate of lung cancer among school building service and maintenance members. Members claim asbestos hazards in schools are widespread.

March-June 1983—SEIU commissions first nationwide study of asbestos in schools that finds 3.24 million children and 648,000 school workers potentially at risk.

September 1983—SEIU studies in considerable detail why asbestos hazards in schools are not being abated—concluding there are two main reasons: (1) lack of an EPA rule requiring safe and complete abatement of hazardous asbestos and (2) lack of adequate funding to school districts.

October 1983—SEIU releases worker educational pamphlet "What Every School Worker Should Know About Asbestos."

November 1983—SEIU simultaneously launches campaign to seek federal funds from Congress and petitions EPA under TSCA for rules requiring abatement of hazardous asbestos in a safe and complete manner in schools and other public and commercial buildings.

December 1983—Leaked EPA internal document concludes: (1) "little abatement activity has been undertaken," (2) "the lack of an abatement requirement . . . has resulted in a reluctance . . . to undertake abatement projects," (3) "quality control in abatement is lacking due to the lack of standards for contractors and inadequate oversight of contract work."

January 1984—SEIU meets with EPA, Ruckelshaus acts concerned but is noncommittal.

February 1984—EPA claims they have granted SEIU petition and will consider issuing regulations to require abatement of hazardous asbestos in a safe and complete manner. Public comments are requested and one public hearing is scheduled in Washington, D.C. on May 7th, 1984.

February 1984—SEIU commissions first nationwide study of state legislation on asbestos in schools. The report, "Filling the Gaps" concluded that while approximately twenty states have enacted various types of legislation—not a single state has done an adequate job—and a piecemeal approach—state-by-state, will virtually assure asbestos hazards will remain in many schools for decades to come.

March 1984—SEIU requests five regional hearings, EPA grants three.

April 1984—SEIU forms broad-based Asbestos in Buildings Technical Advisory Committee composed of organizations and individuals representing children, parents, workers, asbestos abatement contractors, universities, asbestos abatement health professionals and boards of education. Committee drafts nine (9) provisions

that would constitute minimal requirements of a successful EPA asbestos in buildings rule.

May/June 1984—Four hearings held in Washington, D.C., San Francisco, Boston, and Chicago. SEIU locals, other unions, parents, teachers groups and others turn out en masse to tell of school workers dead and dying from asbestos related disease, teachers resigning in protests, parents being threatened with imprisonment for removing their children from asbestos ridden schools. (See Excerpts of Hearings)

July 1984—EPA meets with educational groups and building managers to release preliminary results of surveys prompted by SEIU petition. Results find 30,800 schools with friable asbestos potentially exposing 15 million children and 1.4 million workers—five times original estimates. Nonschool buildings with friable asbestos total 733,000. In what SEIU believes is a violation of the TSCA law, EPA—while claiming to have granted our petition—states that they "are not sure asbestos in schools is a federal responsibility.

August 3, 1984—EPA schedules, then cancels press conference to announce survey results. EPA press office claims information will be suppressed until this Fall (after schools open/after the election?) pending further analysis.

August 7, 1984—Leaked results appear on front page of the New York Times. EPA contradicts own December 1983 internal document and uses contrived figures to claim two-thirds of schools have acted to abate. One-third of the schools in this category include "special operations and maintenance"—essentially meaning anything or nothing has occurred.

August 13, 1984—SEIU sends letter to EPA requesting a timetable for issuance of abatement rules.

August 15, 1984—U.S. Congress reaffirms need for Federal action by establishing $600 million grant and loan programs to assist schools with asbestos abatement.

August 31, 1984—EPA responds to SEIU letter of August 13, 1984 without a timetable.

September 1, 1984—Lacking EPA abatement activity regulations as requested by SEIU, more abatement work is done unsafely than ever before—with many schools more contaminated than if abatement work did not take place. In New Jersey, over 100 schools are closed, with instances of abatement workers flushing asbestos down toilets (See Star Ledger series).

September 6, 1984—SEIU again sends letter to EPA for a timetable—stressing the extreme urgency of the situation. The Agency fails to respond.

September 11, 1984—SEIU files suit in U.S. District Court to force EPA to release a timetable when the demands of our November 1983 petition will be addressed.

### EXCERPTS FROM EPA PUBLIC HEARINGS

Testimony given at recent EPA hearings in Washington, D.C., San Francisco, Chicago, and Boston confirms the confusion and desperation of parents concerned about asbestos exposure in the schools and the lack of abatement activity regulations.

### PARENTS TELL THEIR STORY

"I have two daughters, ages 2 and 5. Our family was emotionally devastated. The tension was incredible while I campaigned before the two critical board meetings. I spent four hours every day and occasionally ten hours for two to three months. I also spent over $500.00. Please, don't expect parents to do your job. Especially when the EPA could do it so much more quickly and properly. The enormous amount of work I did could have been accomplished by one simple phone call or letter from the EPA saying you're required to clean up the asbestos and you're required to do it in this manner! There must be government regulations."—Bobbie Nechtow, Parent and Member of the Health and Safety Committee, the Martin Luther King Jr. Lab Elementary School, Evanston, Illinois.

"A concerned mother in a parochial school in Tennessee called us seeking advice on how to handle a pastor who insisted that as long as he was in compliance with the reporting and record keeping requirements of the EPA, he didn't have to do anything about the fact that school children were still eating in a lunchroom with crumbling asbestos ceilings."—Eugene Moats, President, SEIU Local 25, Chicago, Illinois.

"Parents are in a horrible position. I don't know if I should keep my children home. Luke's mother doesn't know if she is right in sending her child to school. I don't think it is fair for the federal government to rely on parents and teachers. Children expect their parents to protect them. The E.P.A. apparently expects parents to protect their children from this hazard, but without a law behind them, it is

unreasonable to expect that we can do anything."—Susan Mazzochi, Parent and Co-founder, Parents Against Asbestos Hazards in Schools, Maplewood, New Jersey.

"I've been working with the problem for two and a half months, almost full time on the particular problem at hand—asbestos in my children's school. The last month I've been working part-time simply because I had to start making a little money to support my family. It began when I found a pile of white insulating material lying on the floor of two rooms where workman were repairing the pipes. I surveyed the situation and I could see from my experience as an engineer that they'd have to remove a lot more insulation. I immediately went to the principle to warn him that there was a high probability that the material contained asbestos. When I mentioned the word 'asbestos' and the possibility of a hazard to the children, he immediately threw me out of school. He became very violent and very forceful and threw me out of school literally. I had to leave."—Ken Lewandowski, Parent and President of Technical Investigation, Inc.

"I have been already exposed to it in the school that I went to. Why should my children be exposed to it, or anybody else's children, or any adults, custodians, or other people who live and work anyplace in this country . . . ?—Leonard Gabrilla, President, SEIU Local 495, Worcester, MA.

TEACHERS SHARE THE FRUSTRATION OF PARENTS

"The school district had their employees drilling holes in ceilings with asbestos in them. The purpose of the drilling, and it was done during the day when school was in session, was to put burglar alarms and fire alarms in the schools. Now, we don't have problems with that. The problem that we do have is that they could have done it the next day which was when spring break had started but they just didn't think, they just drilled the holes."—Alice O'Maher, Teacher, Madison Teachers Association, Madison, WI.

"We were giving students an idea of what building construction would be by remodeling Lawrence Lawson Elementary School. There were three classrooms to work on and two offices. And what we were going to do is put up siding, sheeting, insulation, and then drop the ceilings. However, it wasn't known to me at that time that the ceilings in all five rooms had asbestos in them. When we laid out the ceiling for the grid, we took our screwdrivers and we punched a hole where we were going to put all of our tie-ins. I had five students working with me. We all had this stuff dripping down our faces constantly. Since we didn't know what material it was, we wore the same clothes for days. We didn't wear any protective devices at all during this time. I myself, exposed five first-grade students who wanted to see what their classroom was going to look like. And this dust was there constantly because it would fall on the floor. It didn't get cleaned up till we were done. We started roughly in September and we really didn't finish it until latter part of February. Three years prior to myself going in that building, the superintendent knew it (presence of asbestos), and the school board knew it. They knew it before we went in there.—Mr. Dunek, LVEC, Local Vocational Education Coordinator, Sparta School, WI.

SCHOOLS WORKERS ARE CHRONICALLY MISINFORMED AND ILL-TRAINED

"In 1973, I worked on rehabilitation in the Chicago schools. The one rehabilitation I was working on, the abatement process, there was to have the custodians take masking tape and wrap the pipes around with. I was a custodian just coming into the Board of Education at that time. There was no training. At the present time . . . they're not giving any training that I know of in the Board of Education on how to do it."—Gary Abrams, Business Agent, SEIU Local 46, Chicago, Illinois.

"School personnel don't understand the gravity of the situation. I had janitorial personnel in the presence of my wife and myself just crumble the material up in front of us and throw it up to demonstrate that it wasn't harmful. I understand this because no one has ever taught that person that asbestos is hazardous. The school superintendent has a very cavalier attitude toward the substance.—Anthony Mazzochi, Parent and Co-Founder of Parents Against Asbestos Hazards in Schools, Maplewood, New Jersey.

"The Toledo superintendent of schools distributed a letter that falsely implied that asbestos exposure in school buildings is no more dangerous than standing on a street corner."—Linda Lampkin, Research Director AFSCME.

"In the Boston public schools there are approximately one hundred and twenty-nine buildings, one hundred and eighteen of which have asbestos present in them. They are not using removal as a remedy of choice. They are not doing exposure assessments. They are not providing any protective gear for anybody in the building. In a negotiation session we asked that respirators and things like that and they said

they didn't see any need, although there has been no studies for exposure assessment in schools. In Boston, I have received two letters from school departments threatening punitive action if I do not cease to monitor the removal in Boston public schools. The school department has agreed in writing that they would adhere to the EPA guidelines. I have not found one site where I have not found some abberration of those guidelines. We have a number of members in our organization that have died from cancer and other asbestos related diseases. We have done a cursory study in 1981 in the state of Massachusetts. In the year 1981, we had a 62 percent death rate from cancer. I do not know what the answers are. People are dying and unnecessarily."—Bill McDonald, President, Boston School Custodians.

"Charles Gideo was a dedicated state employee. If anyone has ever worked with anyone who was dying of this disease, (mesothelioma) it was terrible. This man weighed 235 lbs. and in one year he weighed 85 lbs. and he died. In the boiler room at Fernel School it (asbestos) was hanging from the main head, it was coming off the boilers. Wherever you walked you were walking in it."—Marty Carlow, SEIU Member.

"Last summer, in the San Ramon School District, one of our janitors read the asbestos removal regulations which had been posted in the hallway of the school where removal was underway. She went by that school at night because the removal work was done at night. She looked in the classroom window and she saw men that she described as Spanish-speaking stripped to the waist, without masks, without respirators, removing asbestos tiles from the ceiling and dumping them in the teacher's wastebasket. Then she saw them vacuuming up the asbestos with the teacher's vacuum cleaner."—Alexis Rankin, Occupational Safety and Health Consultant, SEIU Local 390/400, San Francisco, CA.

"I asked the head custodian how long ago she had noticed the asbestos. She said, 'well, about a year ago I mentioned it to the supervisor that whenever we would go up to change lights in the ceiling, there would be white stuff coming down, a lot of heavy white dust!' She asked him what it was and he said, 'well, don't worry about it, just change the lights, and you know, keep on working!' This certainly points out the need for some type of standards. What good is it to tell the school employee of the presence of asbestos if you're not going to tell him how to protect himself or require that the school take the necessary steps to protect him."—William Willet, SEIU Local 208, Indiana.

"When I go to work each morning, I go into my boiler room and turn on the fan. All we hear is we have asbestos in the ceilings, nobody realizes we have it in boilers and on the pipes. The pipe that goes to the heating ducts has asbestos in it. Everytime I turn it on, the asbestos particles go into the system, into the whole school and then every child, teacher, secretary, and custodian has exposure to the fibers—192 days a year for teachers and students and 365 days for regular employees.—Bob Scarrioffini, President, SEIU Local 140, Portland, Oregon.

He was a member of the Boston Public School Custodian Association. His only exposure to asbestos occurred during the course of his work as a custodian. This person is now disabled from working as a result of asbestosis, which requires oxygen treatment at home. There is a similar case of a custodian that was examined in the San Franciso General Hospital Occupational Medicine Clinic. The only exposure that this custodian experienced to asbestos occurred during the course of his work in the public school system. This individual also has documented asbestosis. There also is a teacher who worked for twenty-eight years in the schools of North Dakota who died of mesothelioma. His only known exposure to asbestos occurred in the public schools of North Dakota."—Chris Oliver, M.D., Director of the Occupational Medicine Clinic, Massachusetts General Hospital.

ABATEMENT CONTRACTOR

"The end result being, they came to HRF again and asked for a quote for it to be done the right way. When they got the price, they immediately shopped, found a contractor who has violations and citations from EPA, OSHA, who has been disbarred from bidding in the State of New Jersey Public Schools, been disbarred from bidding from the Board of Education for the City of New York, has been thrown off of countless number of jobs.

And, the fact of the matter is, because he was the low bidder, they hired him. And, I'll tell you what I was told, as the president of HRF I was told, Bob, what we're going to save to hire him it would pay for us to police him and just make sure he doesn't get caught. If you left it to the building owner, he was facing a 500,000 dollar removal project and someone convinced him that they could come in at night

with the crew, start the removal, and save him a quarter of a million dollars, what do you think that owner would do?"—Bob Henkel, HRF Surface Cleaning Inc.

ULTIMATELY, EVERYONE—CHILDREN, TEACHERS AND WORKERS—BEAR THE HEALTH CONSEQUENCES OF ASBESTOS EXPOSURE

"I heard the rumor that a nun who taught at the high school I attended was presently dying of mesothelioma. I called her. She attested to the fact she is dying of mesothelioma. The nun said 'I taught at this one school for 20 years and basically that's where they think my exposure came from'."—Ken Lewandowski, Parent

". . . you can call the occupational health clinic at San Francisco General. There the doctors can tell you that the worst cases of asbestosis they've ever seen was found not in a shipyard worker or an asbestos worker but in a school janitor."—Alexis Rankin

"Exposures in childhood are much more important than those in adulthood and special concern exists for asbestos contamination of our nation's schools. A child of five has five times the risk of death from mesothelioma from the same exposure as a teacher of 30."—Dr. William Nicholson, M.D., Associate Director of the Environmental Sciences Laboratory, Mt. Sinai

"One of the students was quoted by the reporter of *The Times* as saying, 'Well, this is all good but isn't it too late? I have been here for a year inhaling the dust.' Well, the student was right and he was wrong. It was too late for that year. The amount he now has in his lungs is there and what the risk is going to be we will know later, but he was wrong in one sense. That is the effects of asbestos are not only those related to asbestos producing cancer, the less asbestos the less cancer, but it is cumulative and each day's fibers are added to those that you inhale the day before, the week before, or the year before. We have known since then (1965) that it simply takes enough asbestos to start mesothelioma at one microscopic site. The cancer grows on its own and you need no further exposure. So since 1965, for 20 years no, we have known about environmental exposure to asbestos and that very small amounts of asbestos will produce this disease."—Irving Selikoff, M.D., Director of the Environmental Science Laboratory, Mt. Sinai Hospital

"In the Occupational Medicine Clinic at the Massachusetts General Hospital, I examined a custodian who worked for thirty years in the Boston Public School system. He was a member of the Boston Public School system.

Mr. YOUNG. Please proceed.

## TESTIMONY OF WILLIAM STODGHILL, INTERNATIONAL VICE PRESIDENT AND PRESIDENT OF LOCAL 50, SERVICE EMPLOYEES INTERNATIONAL UNION, AFL-CIO, CLC, ST. LOUIS, MO

Mr. STODGHILL. Mr. Chairman, and members of the House Public Buildings and Grounds Subcommittee, I am William Stodghill, international vice president and president of local No. 50 based here in St. Louis. I would like to make a full statement to this committee.

The Service Employees International Union represents 850,000 members with over one-third employed as building service and maintenance workers in schools and other buildings. We thank you for this opportunity to present our union views on the national public health tragedy posed by asbestos in our schools. It is a hazard many believe will kill more children than polio but nature produced a trick on visible paralyzed children to motivate our Federal Government to act. Instead we must wait 20 to 30 years for the asbestos body count. It is a hazard that still largely exists 7 years after it was first discovered because of our worst cases of Government malfeasance.

SEIU first became concerned about the problem when it was brought to our attention by our members who believed they were suffering a lung disease epidemic. We commissioned the first nationwide school study finding over 3 million children, 650,000

school workers potentially at risk, a figure that EPA recently confirmed is five times higher in a report that has yet to be released.

We commissioned a first study of the State legislature concluding this piecemeal approach will virtually assure that asbestos hazards will remain in our schools for decades to come.

Finally, as a last resort, we have been forced to take legal steps to protect our children and members which I will detail in a moment.

Mr. Chairman, do you realize what is happening across this country as I speak? Our union is counting bodies of workers that have died from asbestos-related disease that never worked a day of their lives outside a school. Parents have been threatened with incarceration for removing their children from asbestos-ridden schools. Building maintenance workers are being forced to remove asbestos without the benefit of respirators or other protective equipment.

Teachers are resigning in protest when schools refuse to abate obvious asbestos hazards. Schools are claiming full compliance with existing EPA regulations while children eat lunch under crumbling asbestos ceilings. Our elementary school children have been reported renovating a classroom as part of a semester-long construction project with neither the teacher nor students aware of what the white substance falling while they drilled holes in the ceiling was—asbestos. Even though school superintendents were aware of these facts 3 years early.

Asbestos abatement contractors are having a field day. Workers are flushing asbestos down toilets as referred to earlier by yourself, potentially contaminating city water supplies. Others have been observed transporting asbestos away in their private automobiles and using improper disposal. Reputable contractors claim that 80 percent of all abatement work is being conducted improperly leaving schools and other buildings more contaminated than if the asbestos was never touched.

Schools across New Jersey were unable to open last September after abatement work because the State health department was unable to verify in time that asbestos air levels were down 100,000 fiber per cubic meter of air. Even though this is a level that few experts will claim is safe. Millions are being wasted in removal of materials that were later found not to be asbestos or found not to be a friable asbestos hazard. Experts predict that in 20 to 30 years thousands will die every year as a result of asbestos exposure they receive while in school.

Yet briefly looking at EPA actions since they first declared asbestos in schools posed a significant public health threat, over 7 years ago, under the Carter administration EPA proposed an inspection and abatement rule to be issued in two parts. The inspection rule wasn't released until almost 2 years later in May 1982. In April 1981 the Reagan administration abandoned the second and most important part of the rulemaking, the abatement rule.

Instead, EPA decided to rely on educational efforts to get schools to abate asbestos hazards. Our own internal reports of December 1983 have included that little abatement activity has been undertaken and lack of abatement requirements have resulted in reluctance to undertake abatement projects and quality control in

abatement is lacking due to the lack of standards for contractors and inadequate oversight of contract work.

Under increasing pressure from labor unions and educational groups, the EPA takes the worst possible approach and begins fining schools in January 1984 for failure to comply with the inspection rule—resulting in mass hysteria across the country among parents, teachers, children, and other school workers. Since the Agency has yet to issue companion standards defining what constitutes an asbestos hazard in schools, nor standards requiring that hazardous asbestos be abated, nor standards detailing how abatement work should be conducted—in many schools no abatement activity occurs.

However, even more alarming is the amount of asbestos abatement work that schools are conducting improperly because EPA has not issued asbestos abatement contractor standards leaving schools across the country more highly contaminated than if the asbestos was never touched. The result has been that EPA has transformed a very bad situation into an environmental catastrophe.

Now the EPA is again announcing new steps that it will take to address this 7-year-old problem. The EPA will proudly tell you it plans to administer the Asbestos School Hazard Abatement Act of 1984. What the Agency fails to mention is that Congress, not EPA, felt the need to enact this grant and loan program. In fact, initially, Mr. Ruckelshaus actively lobbied up on Capitol Hill to stop development of the act. The act requires some worker protection and contractor safety provisions—these rules will only apply to the schools that receive part of the $50 million in funding.

Since new estimates claim the asbestos in schools problem will cost $30 to $40 billion, this means that the vast majority of asbestos abatement work will not receive Federal funds—thus consequently these workers will not have legal safety and health protections nor will there be assurances that these abatement contractors will be competent.

Worst yet, the EPA stated that they will try to kill this program, designed to last 7 years, by not seeking funds next year. Second, the EPA is proposing contractor certification language that States could voluntarily adopt. Unfortunately, without requiring that contractor certification be established, it is naive to think that many voluntary programs will be established.

Third, the Agency is proposing to develop pilot information centers. However, we are unclear as to how this effort is different than what the Agency has been doing for the past 5 years. The bottom line, Mr. Chairman, being that you can educate parents, teachers, and other school workers until you are blue in the face about asbestos in schools hazards. But until these groups have a legal right to demand that asbestos get abated in a safe manner. These asbestos problems will persist.

Fourth, the Agency is again talking about releasing hazard guidelines—something the Agency has already done and released in a document released in March 1983.

Fifth and finally, the Agency is proposing a periodic re-inspection program—apparently to cause periodic hysteria among school

workers, teachers, and parents to indirectly assure that more haphazard abatement work is to be conducted.

Quite frankly, we, along with millions of parents, teachers, and other school workers—and their respective organizations are not naive enough to believe that EPA's new proposals begin to adequately address the asbestos in schools problem. We are outraged, exhausted, and frustrated. What else can we do? When Congress created the EPA, the Agency's mission was to act on sound scientific information to protect the public's health. We have reached a new era where the Agency is essentially immune from taking action—no matter how serious the environmental threat nor how loud the public outcry.

That is why last November we petitioned the Agency under the Toxic Substances Control Act, which legally requires the Agency to regulate significant public health threats such as the threat to issue rules that would require that the Agency establish rules defining what constitutes hazardous asbestos, regulations that require abatement once asbestos is found to be hazardous, and most importantly that the abatement work be conducted in a safe and complete manner.

Claiming to have granted our petition last February, the Agency proceeded to hold public hearings and collect comments. To get a sense of the overwhelming desperation and fear and frustration felt by parents, teachers, and other schoolworkers, I would refer you to the testimony presented at these hearings—we have highlighted some of the most striking excerpts which I have attached to this testimony. To make a long story short, we have been meeting with, and talking with EPA for over a month for the Agency to simply supply us with a timetable to tell us when they will respond one way or the other to the demands of our November 1983 petition—the petition that they claimed to have granted.

Therefore, last week on September 11, we felt that we were left with no other choice but to file suit in U.S. district court to force EPA to give us a timetable. Unfortunately, even if we are successful—and I believe we will be—we will have to wait many long years while asbestos fibers are allowed to continue to accumulate in the lungs of our future victims.

In conclusion, I would like to read a paragraph from the testimony delivered at one of the EPA asbestos hearings by Mrs. Bobby Nichtow, a concerned parent from Evanston, IL. Her testimony reads:

> I have two daughters, ages 2 and 5. Our family was emotionally devastated. The tension was incredible while I campaigned before the two critical school board meetings. I spent four hours every day and occasionally ten hours for two to three months. I also spent over $500. Please, don't expect parents to do your job. Especially when the EPA could do it so much more quickly and properly. The enormous amount of work I did could have been accomplished by one simple phone call or letter from the EPA saying you're required to clean up the asbestos and you're required to do it in a safe manner. There must be government regulations.

There must be Government regulations for the safety of the children and the inhabitants of this society for the future.

I thank you, Mr. Chairman, very much on behalf of Service Employees International Union for allowing me to testify before this committee.

Mr. YOUNG. Mr. Stodghill, I appreciate your fine statement and I think that your organization has gotten right to the heart of the matter and that it is going to take action and I think action at the congressional level must be forthcoming if we are even going to start scratching the surface on trying to stop this.

I guess you have to look at it again to realize your dramatic statement at the beginning, the high visibility of paralyzed children really hits home. So I appreciate that comment. We just cannot wait much longer.

I have a series of questions, do you have just a few minutes, Mr. Stodghill, before you have to leave?

Mr. STODGHILL. Yes.

Mr. YOUNG. If I see you starting to move around that chair I will quit, but there are some that would be very helpful to the committee.

Mr. STODGHILL. Sure.

Mr. YOUNG. Your union has certainly taken the leadership. I hope we can work together in the future to try to get the EPA to take on more of a leadership role at the Federal level.

Do most of your union's activities take place at the national level or do the locals participate pretty much as you apparently are doing here in the metropolitan St. Louis area?

Mr. STODGHILL. Mr. Chairman, we will work with you and your committee at the national level. We have a specialist by the name of Bill Bowegan, assigned specifically for this asbestos concern. What we have done on the local level, we have prepared various videos for our local unions that they can show to their membership to acquaint them with the dangers of the asbestos so that they can take the appropriate action at all local levels.

We have approximately 385 local unions and each of those local unions have videotaping of the effect of asbestos and we also encourage them to raise questions to the various school districts or where they may be employed to take appropriate action to correct the problems as they see them.

We are going all out in our conferences, special films are being shown not only to school and building employees, but those in the health care industry and work in the State buildings and work in the Federal buildings.

We have shown these videos to them and I have outlined appropriate actions they can take to help in the problem.

Mr. YOUNG. You have already answered my second question which I appreciate very much. So, obviously, the Service Employees International Union is really doing a job on trying to inform their members.

I think on the local level when the problem is presented to the school districts when the school districts present their problem, I think it will be very helpful that your membership will be well informed on that item.

In addition to the suit against the EPA, what else have you done at the Federal level to address this? I am sure pressure is on all the agencies.

Mr. STODGHILL. At the Federal level we have been very active in what historically has been called lobbying, I think, trying to get all

those involved to get a statement out especially of what the standard is that is posed as hazardous.

I am sure you are aware that it is very difficult to get these people to sit down and try to come up with some standards relative to the danger in terms of being exposed to asbestos.

There is some concern not only from our international union but from the AFL as well. There was a debate on TV some weeks ago as to what is the acceptable level of asbestos in terms of danger to the populace. We have not at this point gotten anywhere with the Agency in that area, but the pressure is on and hopefully working with the committee we can be even more successful in trying to get them to come up with acceptable standards.

Mr. YOUNG. Mr. Stodghill, to your knowledge, has any agency attempted to establish an information clearinghouse to facilitate the exchange of information regarding asbestos abatement?

Mr. STODGHILL. No; not to my knowledge.

Mr. YOUNG. I would assume that that would be advantageous to contractors, engineers, building officials, et cetera, who could share their experience.

Mr. STODGHILL. Yes.

Mr. YOUNG. But not to your knowledge?

Mr. STODGHILL. Not to my knowledge, Mr. Chairman. May I add something?

Mr. YOUNG. Yes, sir.

Mr. STODGHILL. I think it would be very beneficial also for the committee to look into, and I think that when you are talking about asbestos removal—as was referred to earlier—I think also we should look into licensing of those who are going to be asked to remove asbestos because we find that in most States and in most areas that we have people who have no knowledge or experience, calling themselves asbestos-removal contractors.

When you have people dumping asbestos down toilet stools obviously they don't have training in that particular area. So I would hope this committee would suggest that there be some regulations to licensure of those who are charged with removal of asbestos as well, Mr. Chairman.

Mr. YOUNG. I think that is a good point, contractor certification is surely something that EPA and everyone involved should be involved in. That should be part of the rule perhaps that has not yet been promulgated by EPA.

Well, thank you very much. We appreciate your interest and your fine testimony this morning and hope we have not kept you from your rounds too long.

Thank you very much.

Mr. STODGHILL. Thank you very much.

Mr. YOUNG. Our next witness is Ann Jones, principal representative of AFGE Council 236.

## TESTIMONY OF ANN JONES, PRINCIPAL REPRESENTATIVE, AFGE COUNCIL 236

Ms. JONES. Good morning, Mr. Chairman, and members of your distinguished committee. I am Ann Jones, principal representative, AFGE Council 236, region 6.

In the earlier part of the year while attending a seminar, it was learned that 9700 Page was 11 in the Nation as a Government building containing asbestos. This came as a shock to me since I was an employee who worked in the building. On January 9, 1984, I discussed this point with the Labor Management OSHA Committee. I was told to contact Mr. Dave Trees who was the agency representative at 9700 Page. Through Mr. Trees, I learned that the building did contain some asbestos but it was said to be at a safe level.

When asked where was the documentation concerning any testing or maintenance records, Mr. Trees had none to give. AFGE found that the building at 9700 Page still had pockets of asbestos in buildings 100 and 101. It was learned that during the period after the fire through 1981, employees worked and were stationed in some of these areas. Chips would fall from the ceiling and employees' clothing would be covered with particles of asbestos.

There was no protective clothing or equipment provided and there have been no medical checkups or followups provided.

The latest incident of concern came during June this year when a contract worker was allowed into an area during working hours with approximately 150 employees working in the area. Neither the supervisory personnel or the employees were aware that asbestos was about to be removed. It was only through the quick action of some employees who noticed that the worker had placed danger signs on the exit doors and immediately notified the union that this was done.

Upon my arrival to the worksite, the worker was suited up and ready to start the work, but I called and notified the building manager that there was a problem and to come and see this immediately, and the worker was stopped.

When I asked when the asbestos would be removed—would be removed at the June 20 OSHA meeting, I was told that the process had taken effect that evening. There was still some unanswered questions by the agency that was not answered by the agency, excuse me. Who in the agency oversaw the process to ensure that it was done properly? Was the company who did the work reliable? Was a professional hygienist called for air testing? Were there evening shift employees in the area?

AFGE Council 236 thinks that the Government owes its workers the protection of working in a building free of asbestos because even now in some areas this asbestos pipe insulation in particular, is being damaged, even now in building 101 there are still asbestos in the ceiling in some areas.

To think that the Government has not attempted to replace this insulation especially in areas where there is high level of activity says little for the safety of its own employees.

We ask only this: that something could be done for the protection of Federal employees.

Thank you.

Mr. YOUNG. Thank you.

Ms. Jones, when did the employees at the records center first find out that asbestos had been found in the building, and do you know how they were told?

Ms. JONES. The first incident that I related to was due to some electrician workers there.

They had to go into what they call an ME room and they were told that they had to put hangers in there and they found that the asbestos was in the ceiling. I was assured that they had removed this from this area, but these same electricians tell me that there are still pockets of asbestos where they do have to do this work at and it has not been removed.

And the second incident, the employees were not informed that there would be someone on the worksite. In fact, from my understanding they had got the time mixed up, but for him to have come into a protective building and to a work area where there was approximately 150 employees during working hours is unexcusable.

Mr. YOUNG. Were the employees asked to take precautions during removal?

Ms. JONES. No.

Mr. YOUNG. Were you aware of any precautions that were taken?

Ms. JONES. No.

Mr. YOUNG. And such as areas being closed off?

Ms. JONES. No.

Mr. YOUNG. Furniture, et cetera, being removed?

Ms. JONES. No.

Mr. YOUNG. None of that happened?

Ms. JONES. No.

Mr. YOUNG. So you were not aware this was going to happen.

Ms. JONES. Right.

Mr. YOUNG. Ms. Jones, do you have any suggestions for improving communications with the employees and what do you think could be done to make sure that any removal is done safely?

Ms. JONES. I think that if the agency is going to remove the asbestos, even the piping insulation that they first notify the tenant agencies and that they could relocate the employees to another area. I know that they have the expense of moving and what not, but it would surely ensure that these employees would not be in the area that they were going to be removing the substance from.

Mr. YOUNG. So hopefully we can ask them to have a better liaison with the employees in any future abatement programs that are going on in the buildings. I know in San Francisco people were really concerned. We were there while it was going on. It just justified, in my judgment, their concern.

Ms. JONES. AFGE has published a book and we will be getting copies to circulate to the employees to, one, warn them about what is going on; and two, that there may be possible asbestos in the area.

Mr. YOUNG. We would like to have one ourselves, I believe, if we could.

Ms. JONES. OK.

Mr. YOUNG. Well, thank you very much for your interest in this particular problem. We appreciate your testimony this morning.

Ms. JONES. Thank you, Mr. Chairman.

Mr. YOUNG. Why don't we do this, I am going to ask for about an 8-minute break or so, and if Mr. Jones, Mr. Benton, and Mr. Houston could come up together because it is all related to the educa-

tional activity, or their representatives could come up, we might move a little faster on these.

Is there anybody else in the audience that would like to make a statement? We would take it now for the record.

If not, we will try to provide you time if you would like.

If you do have a statement you can give it to the staff.

[Recess.]

Mr. YOUNG. We will begin then. I appreciate your being here, gentlemen, and we will look through the testimony to see maybe if we could alleviate some of the time problems here.

Mr. Gary Jones will be first, assistant director, school building service, Missouri Department of Elementary and Secondary Education, followed by Dr. Benton, superintendent of Riverview Gardens School District, and Donald Houston, assistant superintendent for business management. Mr. Jones, please.

I haven't had any involvement with the department of elementary and secondary education since about 1976, the end of the year, so I am sure a lot of my friends are still working at that level, and I always felt high regard for our Missouri Department of Education. So, Mr. Jones, you may proceed.

**TESTIMONY OF GARY JONES, ASSISTANT DIRECTOR, SCHOOL BUILDINGS SERVICE, MISSOURI DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION; EDWARD BENTON, SUPERINTENDENT, RIVERVIEW GARDENS SCHOOL DISTRICT; AND DONALD D. HOUSTON, ASSISTANT SUPERINTENDENT FOR BUSINESS MANAGEMENT, CLAYTON SCHOOL DISTRICT**

Mr. JONES. Thank you, sir. I just want to thank you for allowing me to be here and testify before your committee. Briefly summarizing the department of education's involvement in the asbestos program, we have been involved in it since approximately 1980. Our involvement basically has been to disseminate information to local educational agencies concerning the asbestos problem and regulations of it.

In 1980 there were two sets of regulations that were proposed and eventually passed, one by the EPA, one through the U.S. Department of Education. The Department of Education regulations were designed to set up a loan program to assist local schools with asbestos abatement projects.

The EPA regulations were designed to assist schools and direct them into a national sampling and so forth. Our involvement primarily has been to take the information provided to us by the EPA and because of our direct relationship with schools, all 546 in the State, we have provided the information as a clearinghouse, you might say——

Mr. YOUNG. 546 public schools?

Mr. JONES. Public school districts in the State of Missouri.

Mr. YOUNG. That does not include private, I assume?

Mr. JONES. No, sir, it does not. So we have attempted to provide information to all 546 public school districts in the State, and also in 1980 we provided the information to nonpublic schools also, originally.

Mr. YOUNG. You have made that information available to them?

Mr. JONES. Yes, sir. Since that——

Mr. YOUNG. This same type of information that you provided to them?

Mr. JONES. Yes, sir, the inspection documents, I think they were referred to as document 1 and document 2, about all that stuff.

Mr. YOUNG. Mr. Jones, are you familiar with this particular booklet?

Mr. JONES. No, sir, I am not.

Mr. YOUNG. It would seem to me that EPA should have surely made this available to the school districts.

Mr. BENTON. Pardon me, it is a different color probably. That is the revised one you have. We have the old one.

Mr. JONES. Right. We have not been provided with the new updated revised copy from EPA.

Mr. YOUNG. Thank you.

Mr. JONES. The ones Dr. Benton mentioned are the ones we provided originally. Since that time what we have been trying to do is to determine if indeed the legislation is ever going to be funded to keep the districts informed as to if there will be money available, and also to collect data back from school districts attempting to determine what may be the extent of the asbestos problem in the public schools of Missouri.

In terms of the State schools that we operate, we operate 51 State schools for the severely handicapped; 27 of those are owned, and 24 of those are leased. In the State schools, all but two we have not found any asbestos at all, and the two we found, traces were in the lease buildings. We are in the process of trying to have a building leased, to get out of those two buildings, and we will take the necessary action to correct the problems.

In the school for the blind, we have found none, and in the school for the deaf we have asbestos in boiler wrappings and pipe wrappings. The legislature appropriated the money and the project will be undertaken to remove that material right away.

The only other comment that I would like to make in terms of public schools, this program has been somewhat confusing from the very beginning because of two separate Federal agencies handling the program, one to set up the loan program and one to pass out information. There has been a lag at times in terms of information we have been able to receive to pass on to schools. Without the loan program, most school districts in the State are not going to be able to fund removal or abatement programs.

It requires, as you are aware, a two-thirds majority vote to pass bond issues and tax measures in Missouri, and even though this is a serious health hazard, it is difficult for school boards and administrators to get a bond levy passed even for the health and safety of the children that attend the district.

So we would encourage the 1984 version of the School Hazard Abatement Act to be funded. It disturbs our agency when a few weeks ago one of the key administrators from EPA says he will not seek additional funding because to me that is kind of an upsetting remark and it will be also to school districts not only in the State, but across the country. So we would encourage that that piece of legislation be funded to its authorized limits for the next 7 years. Thank you.

Mr. YOUNG. The subcommittee expressed the need for funding of this program at the hearing held in Washington, and I think both sides of our committee feel that way. It is bipartisan. We are very much concerned about that statement of Mr. Morris. So I am sure that we will be following that up as closely as we possibly can.

Why don't you go ahead.

Mr. JONES. That is basically all the remarks that I would like to make at this time.

Mr. YOUNG. What suggestions do you offer, Mr. Jones, for ways in which EPA and the Congress could provide better assistance to the States and localities in dealing with the asbestos problem in the schools?

Mr. JONES. Aside from financial assistance through the loan and grant programs, I think at least in Missouri—I can't speak for other States, but in Missouri, with the type of rapport and working relationship we have with school districts, I think if all of the information concerning what districts need to do and how to go about taking the necessary abatement steps and so forth, if that could be somehow coordinated or channeled through our agencies it would probably greatly facilitate communications.

Most days in our office we receive anywhere from 10 to 15 calls especially after publicity in terms of an EPA inspection. We will receive calls from school districts all over the State, large and small, wanting to know: Have I done everything I need to do? Is there anything new I don't know about? Where can I go get this or that help? And so forth.

So if there could be maybe a little better coordination from the Environmental Protection Agency through our office—I don't mean it critically in terms there has not been, because there has been. But as Mr. Kay mentioned, they have only one full-time administrator for four States. When all this first started back in 1980, it was a very, very difficult job, and still is, and the assistance, and so forth, they have provided has been very beneficial and helpful, but it is just a matter of coordination and timing when their staff is as small as it is.

Mr. YOUNG. My series of questions related to your full comment there, namely did the department receive inquiries, and you have addressed that. What help have you received from EPA in responding? Not a lot in my judgment.

Have the States received information on EPA guidelines and technical assistance? What is your evaluation—you have answered them.

Let me ask you this question. The States received information on EPA guidelines and technical assistance program. What is your evaluation of the effectiveness of the guidelines and the programs in helping schools in Missouri?

Mr. JONES. I think the original intent of the regulations have been met by most school districts in the State, if not all, in terms of inspection, sampling analysis and posting of notifications. Most school districts have met those requirements.

At least that would be my observation. So I think the basic information and technical assistance EPA provided has been beneficial. I think where sometimes we have had problems is when a district has asked specifically for some additional on-site type of assistance,

sometimes they have gotten misinformation, conflicting information, delays in having the on-site visit from an EPA person, sometimes conflicts in information given other the phone, et cetera.

Again, I think it may be traced to just a lack of manpower to be able to respond immediately to a district's request.

On the whole, I think we have received, the State has received the necessary technical assistance although we don't have the updated publications, as was indicated a moment ago. But on the whole, we have received the basic information necessary that we could pass on to school districts to inform them as to what they need to do.

Mr. YOUNG. Fine, thank you, Mr. Jones.

In the inspection of a building, if removal of asbestos is necessary, how do you find a contractor certified to do the work?

Mr. JONES. In terms of the inspections of local agencies, the guidelines call for the local school officials to do so, and that will be the case primarily that you will see.

There will be some school districts because of the available finances or because of the school administrator or board did not feel comfortable in doing it, that may have hired an outside architect or person trained to make the inspections. But primarily across the States you will find that it was the school administrator who made the inspections.

In terms of contractors, our agency does not recommend or certify contractors. We have a list of contractors that EPA provides. If we are called and an administrator asks us, do you have any information in terms of contractors that can help me? We will provide them with that list or ask them to call EPA and ask them for a list.

Mr. YOUNG. Thank you. I think our next two witnesses will give us an almost on-the-scene situation of how it happens in a school district. Thank you, Mr. Jones.

Our next witness would be Dr. Edward Benton, superintendent of Riverview Gardens School District. Dr. Benton.

Mr. BENTON. Thank you, Mr. Chairman.

Mr. YOUNG. I appreciate your coming this morning. If you do care to submit a statement, fine, but if not, summarize how you wish.

Mr. BENTON. I don't have a prepared statement, Mr. Chairman. Perhaps I didn't understand quite the format of today's hearing.

Mr. YOUNG. I would like to apologize for that.

Mr. BENTON. No, no, that is probably our fault too. You know, middle western superintendents sometimes don't understand what is going on. But you wanted to know basically what kind of help we have gotten. How about zip?

Mr. YOUNG. OK, good. I understand that.

Mr. BENTON. At the risk of alienating the affections of my friends in the EPA office in Kansas City, where there are charges pending against Riverview Gardens for not doing the job the way they thought we should do it, maybe this would be a good place to get on the record, I have been trying to tell people for over a year that I had a letter from the St. Louis County Division of Health that said I didn't have any asbestos, so I thought that is swell, I am home free.

So, it is my fault. I read some of their guidelines, I don't think I got them all. I still have a thing about the USPS and the way they delivered the EPA documents.

But when the county health people finally came around and said, "We think we tested wrong," it was well after the deadline. So, they came back and tested and said, "We think you have got asbestos now." In 1979 we didn't have it. In 1983 we have it.

So, we immediately informed the EPA that we had a problem. And we got back from them, in about a week's time, a box full of booklets.

Mr. YOUNG. How could you even follow the guidelines? They are pretty technical.

Mr. BENTON. We thought we were in compliance. The one particular school that was the focus of all the attention had been encapsulated. We spray-painted the ceilings previous to the deadline. But we had a leaking roof and that was the key to our whole problem, I think, because intermittent leaking and drying and so forth caused some of the plaster to fall.

Now I understand that when it is wet and it falls it is not a problem, it is not emitting fibers. That gets me to part of your comment a while ago about flushing it down the toilet. It is not all that bad a thing because it gets it all wet and it is not emitting fibers.

However, you have to understand I am a historian, not a science teacher. But from there it was all downhill. We eventually—we were, I think—well, I am choosing my words a little more carefully. We were——

Mr. YOUNG. A historian can almost do anything, can't he?

Mr. BENTON. I keep telling my colleagues that, but they don't believe me.

I don't want to say we are the victims of the EPA program, but I guess that will do for lack of a better word. I came across an article last September that said the EPA was not going to spend one penny on abatement, they were going to put their efforts into stirring up the parents who in turn will take care of the local dumb superintendents and school boards, and that is sort of what happened.

You know, we closed two buildings finally. We had the luxury of being able to close two buildings because we had a junior high sitting empty we could move the children to. We closed two buildings of elementary students, K through six, moved 750 students into a junior high building. That sounds fine until you get little bitty-kids trying to get drinks out of a junior high drinking fountain, things of that sort.

But we have now just about finished getting one of the buildings ready, but the only way we could do anything about our problem—that was to fix our roofs, of course was the first thing—we had to pass a bond issue. Our problem started in September 1983. We lost a bond issue election in February 1984 because—I still think—well, the publicity in the paper the Friday before our election said the State was going to do something about it. Well, people don't want to pay an additional 10 cents on their taxes; they are going to go out and vote no, which they did.

So, we ran it again in June, and it passed. Now, because of our financial situation, we only sold very few bonds, so we fixed one of

the schools. That is $70,000 for that particular job. We have a bid for the other school that is pending. We trust he will hold it until next March when we sell the other bonds, that is, $60,000.

Mr. YOUNG. That is where you are at right now.

Mr. BENTON. That is part of it. We have done a lot of other testing. Things of that sort. I thought the EPA people were very helpful to the parents. I didn't think they were as helpful to us as they—I don't know what I expected, maybe. Maybe I expected too much. But I went to a seminar. The reason I knew about the blue book is I flew to Washington and got one.

That is overstating it. But I went to a seminar in Washington before they were having two sessions on the asbestos problem, and what I got out of that was "Hey, gang, you are on your own," which is what I have always been told by some of the people who have come to the office.

We have been fortunate. Our voters finally did pass a bond issue to say, yes, we want to fix that up.

But you know, I keep getting bombarded all the time with "Why don't you let the Federal Government pick it up?" I don't think the Federal Government is going to pay for it. In fact, I don't think since we have two buildings fixed up that we will even qualify in the loan program.

Mr. YOUNG. You mean because you have already done it?

Mr. BENTON. Yes.

Mr. YOUNG. OK.

Mr. BENTON. I would doubt we would. In fact, I was told by a couple EPA people last August from Washington that we would probably not.

Mr. YOUNG. We might be able to look into that.

You know, we did approve in the bill the President signed authorizing $600 million for 7 years to help.

Mr. BENTON./Was it funded?

Mr. YOUNG. No.

Mr. BENTON. It was only authorized, right?

Mr. YOUNG. Right.

Mr. BENTON. In fact, the $50 million that was authorized several years ago, has that been funded?

Mr. YOUNG. That has, I believe, yes.

However, an additional $100 million, I believe, for this calendar year 1985 was not requested even though it was authorized.

I did not copy down the Riverview Gardens comment in the paper a month or two ago. Do you have any extra copies of that you can send us? Does the staff have any of the Riverview Garden stories?

Weren't there some stories in the local press?

Mr. BENTON. In January and February, yes, we made the front page of the Post. I can send you copies of them.

Mr. YOUNG. Any other comment, Dr. Benton, right at this particular point? I have some questions later.

Mr. BENTON. I was curious, I noticed a man talked about all the wonderful things I did. How much money did he spend?

Mr. YOUNG. I don't know. Not enough.

Mr. HOUSTON. Thank you, Mr. Chairman.

Mr. YOUNG. Let me ask you, would you mind just 1 second waiting.

Mr. Houston, just 1 minute because I guess they have the noon news and et cetera, et cetera, so I will just take 1 second.

[Recess.]

Mr. YOUNG. Thank you for being so courteous and patient.

Dr. Benton, would you like to make another comment before we go to Mr. Houston?

Mr. BENTON. Yes; I wasn't thinking when I talked before. I would also like to see in the record that this program that EPA has instituted of funding school districts, are you aware they have a gentleman or lady called the Cash Development Officer?

Mr. YOUNG. No; a Cash Development Officer at EPA?

Mr. BENTON. Yes; does that mean I am going to get fined?

He said, "Oh, yes."

This was because my interpretation of friable and theirs didn't agree, and often they won't.

It seems a little bit backward to take money away from school districts for finals when they are desperately in need of the money to do the abatement.

Mr. YOUNG. I agree with that completely.

Mr. BENTON. The answer I got from an EPA person in Washington at the seminar was: Oh, yes, but we never have collected a fine.

Being a school teacher, you don't tell kids you are going to do something and not do it. It's sort of bass ackwards, if you pardon the expression.

Mr. YOUNG. That is OK with me. I agree.

Mr. Houston, please. Assistant superintendent for business.

Mr. HOUSTON. Yes, sir.

Mr. YOUNG. Any statement you would like to submit for the record without objection will be made a part of the record and you can summarize, Mr. Houston. I do have a series of questions, I think, for you and Mr. Benton that we might get to in a few minutes.

Mr. HOUSTON. I have no statement. Our experience has been very similar to Dr. Benton's, in that in 1980 St. Louis County told us that we had no asbestos and then came back in August of 1983 and then said we did have asbestos.

We don't blame the county for that. We think that they thought they were doing the proper thing and had made the proper test. But we then notified the EPA in early September.

In latter September, EPA came down and inspected three of our buildings. We did not hear from EPA for a considerable length of time. During that interim, I wrote two letters to the EPA and they were unanswered.

In June, this past June, we finally had a written statement from EPA. In it, they indicated that perhaps the letter had been lost, the one that had been sent to us, giving us some information on their inspection.

During the interim, we went ahead with our asbestos work and the major problem we encountered was coming up with specifications and finding someone that had some expertise in this area so that we could depend on them to write up specifications and that type of thing.

We ended up hiring a consultant and did draw up specifications for us. We went out for bids as I recall in July, and six or seven companies were interested. We ended up with one bid; the one bid was about three times our budgeted amount, so we threw out the bids, went back out for bids. The bids came back about 2 weeks ago and last Wednesday night our board of education awarded bids for the removal of asbestos in four of our buildings.

We received only two bids at the second letting. One bid was $116,000, the other was $278,000, as I recall. So there was quite a spread in the two bids.

During the time that we had the job out on the market Wednesday, approximately 15 or 16 companies were interested in the job. At least 10 or 12 of them met with us on a walk-through our buildings, to be sure that everyone was aware of what areas we were talking about and to review the specifications.

As I indicated, the board did let the bid last Wednesday for the four buildings, and we hope to do that work over Christmas vacation and over spring vacation and the early part of this summer.

Because of the money involved, our school district is trying to work this out over a 2- or 3-year period. We hope to go back out on the market again this spring or for the balance of the buildings to determine if we can go ahead with the complete removal of the rest of the asbestos. We are going the method of removal and not encapsulation, at least at this point.

We think that if we go into the encapsulation part of it, that perhaps somewhere down the line, someone will decide, no, you should have removed it, and so we will put that money to waste. So, we are going ahead with removal.

We do have a suggestion or two. As I have indicated, the specifications, to me, seemed to be the tough part on doing any asbestos work.

Mr. YOUNG. It sure seems to me—I don't want to break your train of thought—but it seems to me EPA must come out with the guidelines immediately with the situation that has developed in the schools.

Mr. HOUSTON. I think it would be very helpful they could come out with sample specifications.

Mr. YOUNG. At least to give you guidelines until they are finalized.

Mr. HOUSTON. Right. We did, as I indicated, spend about $10,000 on doing the specification work and most of it, after you draw up the first set of specifications, you can repeat on your second jobs. But that would be very helpful.

As Mr. Jones indicated, I think it would be very helpful if everything would be channeled through the state. We are accustomed to working with the State, and I believe that this would be very helpful.

Mr. YOUNG. That should be the clearinghouse. OK.

Mr. HOUSTON. Thank you.

Mr. YOUNG. Fine.

I don't think we need to run through these series of questions that the committee has prepared. I think what is needed more than anything is immediate action at the EPA level to try to set these guidelines so you have some idea of how to proceed.

Surely we will be calling on Mr. Ruckelshaus right now with what we are finding in St. Louis with just the few school districts we have asked to appear once we start again our series of hearings, particularly if we have them jointly with the Education and Labor Committee and the Commerce and Energy Subcommittee of Mr. Florio.

You know, we are going to hear testimony after testimony similar to what you gentleman have presented this morning.

So we will at least in the interim get a letter off to Mr. Ruckelshaus and give him a short summation of what we found here this morning relative to the problems we are having in the metropolitan St. Louis area and then the problem the State department of education has trying to make some sense of what is going on particulary with the school districts being cited throughout the whole country.

So unless the staff has any further questions that I should ask of any of you gentlemen. Dr. Benton?

Mr. BENTON. I was a little concerned about Mr. Stodghill's indicting of the schools. You know, I have been in education for 33 years and if I thought for a minute that it was really as hazardous to the children's health and teachers' health to just walk into these classrooms—all of my schools were built before 1978, and I would be certainly remiss in not just closing down the whole shop.

I think that a lot of information needs to be garnered as to whether or not these school children really are in a hazardous situation. I know they said ours were because of the ceilings, some of the plaster falling, and that problem. I couldn't find a parking place this morning, so I walked up here from the parking lot. Did I inhale asbestos because of the brick linings out on Market Street as on an ordinary day?

That is another facet of the EPA Program. They will not allow—they won't accept an air sample. The air samples at these two schools indicated the air was better inside the schools even though we had the problem with the ceilings; than it was outside. Yet that is not acceptable.

But once we started tearing it down, it comes under OSHA, who requires you to have an air sample before, during, and after.

I have tried to make that point with EPA before, but they tell me that I am missing something, and I probably am.

Mr. YOUNG. I think your question about the health testing is a good one.

Mr. BENTON. These two buildings of mine which have been on the block now, have been in existence for just around 20 years, in their 21st year. I offered to the EPA people in Washington an ideal group of students to be tested. They were not interested. They didn't have the money.

Mr. YOUNG. I think that is a good point. Times Beach is a good point, and we have insisted there, FEMA and the EPA have agreed to it, that you could be tested according to the guidelines of the Center for Disease Control in Atlanta, GA. And I almost insisted on that right away at the beginning because of the dioxin problem that nobody really has the answer to at this point. So we do have some samplings being put in for a data bank for the future. So that makes sense too.

Mr. BENTON. We could provide you with 20 years of students who have gone through that building. I should have said also in my remarks, if I can take another minute, that the State division of health has been extremely helpful.

Mr. YOUNG. I am not quite sure in the 1983 county health investigations, how did that happen? Maybe both of you would like to address that matter?

Mr. BENTON. I am tempted to think they decided what they had done when the guidelines came out, decided they didn't take enough samples, which was the case for us, I think, and decided to come back and take three samples, or they decided they didn't use the right type of microscope.

Mr. YOUNG. Would you care to respond?

Mr. HOUSTON. I would agree with that. I would like to point out, though, that St. Louis County is really trying to be helpful, in that they offered to come out and make the inspections at a time when no one really knew what they were looking for or anything else, and so we appreciated that.

Mr. YOUNG. I found them to be highly regarded as a government agency. I have no criticism of them.

Mr. BENTON. In 1979 and 1980 and even beyond, they didn't have any idea about an asbestos problem, but they came out and took samples.

Mr. YOUNG. Well, fine, gentlemen. We thank you three gentlemen for your testimony. We will almost immediately urge the EPA to move ahead as rapidly as they possibly can because of the seriousness throughout the whole country, and to make some comment relative to health testing of the students.

Thank you all very much.

Are there any other witnesses that would like to appear before the subcommittee this morning?

If not, the record will stay open for about 30 days for anybody that would like to make any further comments.

Thank you all very much.

The subcommittee hearing is adjourned.

[Whereupon, at 11:40 a.m., the subcommittee adjourned.]

44-055 O—85——7

# ADDITIONS TO THE RECORD

LOPAT ENTERPRISES INC.

1750 BLOOMSBURY AVE., BLDG. #1 • WANAMASSA, NEW JERSEY 07712 • (201) 922-6600

Thank you for your inquiry on K-20. This is a new chemical system and operates in a unique way. Because of the properties of K-20, we have a great deal of flexibility in applications. Should you at any time come across a spill or a leak, or just want some information in general, call us at (201)922-6600. You'll be surprised at what we can do!

PREPARATION OF K-20

Mix "A" and "B" parts in a 10:1 ratio (10 parts of the large container to 1 of the small container). Stir or shake well and apply with spray or roller.

NOTE: This material has a recommended application life of four(4) hours. After this time, the material will become too viscous to apply. Do not return unused portions of chemicals to either container, this will cause contamination of the rest of the material.

LOPAT ENTERPRISES INC.

"LOPAT'S K-20"

APPLICATION TIPS

SPRAYING

K-20 can be applied with any spray apparatus with an adjustable flow. Usually a fine fan spray will be most efficient. As material is applied it will absorb into the matrix of the object. In treating an object, the encapsulant flows through the micro-pores or capillaries of the object being treated. If it is applied too quickly there will be excess surface coating or run-off of K-20. This excess or run-off will clog the pores and prevent optimum saturation. It is by deep penetration that K-20 develops it's great strengths. A light even coat will moisturize and lubricate surface pores which will allow the subsequent coat to penetrate deeper into the strata. Generally you should start at the uppermost point and work your way down so that any run-off will saturate into the surface under where your spraying. You should spray until the area looks wet and move on. If on initial spray you have K-20 running off for more than three inches, you are applying too heavily. If you apply too much there will be a surface residue which will eventually flake off. After you have sprayed an area within a few minutes it will probably appear to be dry. If so, that indicates that the strata will accept more spray. If an area still appears wet after three or four minutes, stop; you have applied as much as will be useful. If K-20 is being applied around windows, we suggest masking the glass. Overspray on glass should be washed off immediately with warm water. If overspray is not removed from glass, it will wind up blurred and irregular.

ROLLER

If dense concrete flooring is being treated, such as pre-stressed concrete, we recommend roller application. This will help to break the resistance of a standing surface and allow better penetration. Application rate should be judged by the same criteria as spraying.

*Suite 200 640 Mattison Avenue Asbury Park, N.J. 07712 (201) 776-6710*

Lopat's K-20 Application Tips cont'd.

STORAGE

Keep this material from freezing and covered when not in use. Once parts A and B have been mixed, you have approximately an hour before it will start to set. Do not return mixed material to either container as this will contaminate the individual parts and render them ineffective.

CLEAN UP

Plenty of warm water should be used for cleaning sprayers or rollers. If accidental spillage occurs, mop up areas with warm water, and flush into sewer. *This applies only to spills that have occurred before application of K-20.

*CAUTION*

This substance can cause eye irritation! In the event of accidental exposure, irrigate the eyes immediately with fresh clean water and seek medical attention as soon as possible.

LOPAC ENTERPRISES INC.
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Subsequent microscopy performed by Philips Electronic Corporation with an Electron Microscope.

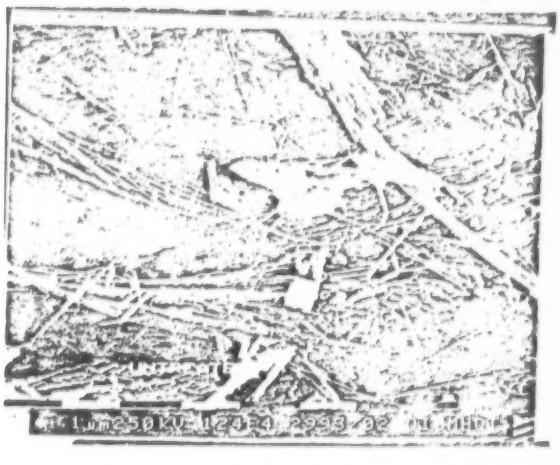

PHOTO NO. 1

MAG. 1240X

UNTREATED FIBERS

Notice loose, particulate, dusty appearance.

LOPAC enterprises inc.
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Subsequent microscopy performed by Philips Electronic Corporation with an Electron Microscope.

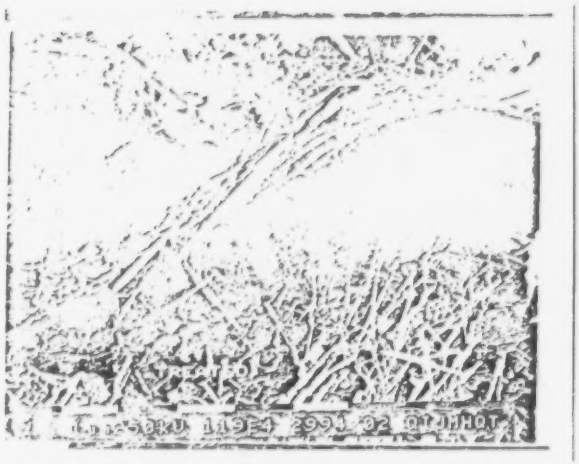

PHOTO NO. 2

MAG. 1190X

TREATED FIBERS

No evidence of dust, fibers have a consolidated appearance

LOPAT ENTERPRISES INC.
1750 BLOOMSBURY AVE., BLDG. #1 • WANAMASSA, NEW JERSEY 07712 • (201) 922-6600



Subsequent microscopy performed by Philips Electronic Corporation with an Electronic Microscope.

PHOTO NO. 3

MAG. 7450X

UNTREATED FIBERS

Rough, loose texture.

LOPAC ENTERPRISES INC.
1750 BLOOMSBURY AVE., BLDG. #1 • WANAMASSA, NEW JERSEY 07712 • (201) 922-6600



Subsequent microscopy performed by Philips Electronic Corporation with an Electron Microscope.

PHOTO NO. 4

MAG. 2020X

TREATED FIBERS

Loose material is now solid, has an etched appearance.

United States Testing Company, Inc.
Chemical Services Division
1415 PARK AVENUE • HOBOKEN, NEW JERSEY 07030 • 201-792-2400

# REPORT OF TEST

December 22, 1983

CLIENT: Lopat Enterprises, Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln Davis

NUMBER
68461

SUBJECT: One patio brick coated with K-20.

AUTHORIZATION:

In person December 12, 1983.

PURPOSE:

The client submitted the patio block to be exposed to laboratory wind driven rain testing for a period of 24 hours.

PROCEDURE:

Wind driven rain resistance was performed in accordance with Federal Standard TT-C-555.

RESULTS:

After 24 hours of exposure no water penetrated nor dampened the back side of the patio block.

The weight of the block was as follows:

| | |
|---|---|
| Initial Weight | 12,368 grams |
| Wind Driven Rain - 24 hrs. | 12,357 grams |
| Weight after Drying Out | 12,248 grams |
| Wt. Loss Against Initial Weight | 120 grams |

COMMENT:

The specimen had a weight loss of 120 grams after test procedure. This loss can be the result of leaching out of soluble salts in the concrete and/or a loss of the K-20 coating.

• • •

SIGNED FOR THE COMPANY

BY W. S. Gilman

William S. Gilman



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Form 863

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# REPORT OF TEST

October 21, 1983

CLIENT: Lopat Enterprises, Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attn: Mr. Linc Davis

NUMBER 68159-1

SUBJECT: One (1) sample of K-20 supplied by the client

AUTHORIZATION:

Client's verbal of September 29, 1983.

PURPOSE:

To determine the efficiency of the coating supplied by the client, in preventing chlordane exudation.

PROCEDURE:

A 19.05 centimeter x 9.00 centimeter cinder block surface was coated with a chlordane mixture. As requested by the client, the concentration of the mixture consisted of 1 oz. of chlordane per 1 gallon of water. Twenty-four hours later the special K-20 coating supplied by the client was applied to the surface of the block. A second coating was applied after twenty-four hours. The cinder block surface was then wiped with a 7 centimeter filter pad, saturated with hexane. The filter pad was then extracted in 10 milliliters of hexane. Aliquots of the extract were then injected into a gas chromatograph equipped with an electron capture detector.

A second block was also analyzed in the same manner. This block measured 5 centimeters x 5 centimeters.

RESULTS:

| Sample I.D. | µg/ml Chlordane |
|---|---|
| 5 cm x 5 cm block | Not detected |
| 19.05 cm 9.00 cm block | 1.88 µg/ml |

The detection limit of chlordane is < 1.00 µg/ml.

• • •

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Form 303

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# REPORT OF TEST

October 13, 1983

CLIENT: Lopat Enterprises, Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attn: Mr. Linc Davis

NUMBER 68159

SUBJECT: One (1) sample of K-20 supplied by the client.

AUTHORIZATION:

Client's verbal of September 29, 1983

PURPOSE:

To determine the efficiency of the coating supplied by the client, in preventing chlordane exudation.

PROCEDURE:

A 19.05 centemeter x 9.00 centimeter cinder block surface was coated with chlordane supplied by the client. Twenty-four hours later the special K-20 coating supplied by the client was applied to the surface of the block. A second coating was applied after twenty-four hours. The cinder block surface was then wiped with a 7-centimeter filter pad, saturated with hexane. The filter pad was then extracted in a known volume of hexane. Aliquots of the extract were then injected into a gas chromatograph equipped with an electron capture detector.

A second block was also analyzed in the same manner. This block measured 5 centimeters x 5 centimeters.

RESULTS:

| Sample I. D. | µg/ml Chlordane |
|---|---|
| 5 cm x 5 cm block | Not detected |
| 19.05 cm x 9.00 cm block | 1.88 µg/ml |

The detection limit of chlordane is < 1.00 µg/ml.

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Form 663

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# REPORT OF TEST

August 23, 1983

CLIENT: Lopat Enterprises Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln Davis

NUMBER 67913

SUBJECT: Special coating supplied by the client identified as K-20.

AUTHORIZATION:

Client's verbal of August 8, 1983.

PURPOSE:

Aroclor PCB characterization study on contaminated cement block and cinder block which was initially spiked with 100 µg/ml of Aroclor 1242.

PROCEDURE:

The samples identified as cement block and cinder block, which had been analyzed previously over a period of eight months, were crushed. The total sample was extracted in a known volume of hexane. The extract was then concentrated to a working volume. Aliquots of each extract were then injected into a gas chromatograph equipped with an electron capture detector.

Aliquots of Aroclor 1242 standard were also injected into the chromatograph, under identical conditions, for reference purposes.

RESULTS:

| | Aroclor 1242 |
|---|---|
| Cement Block | 46.63 µg/ml |
| Cinder Block | 34.11 µg/ml |

COMMENTS:

The Aroclor recovered may indicate incomplete recovery or possible interactions of the K-20 with the Aroclor.

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Page 1 of 1

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Form 863

United States Testing Company, Inc.
Chemical Services Division
1415 PARK AVENUE • HOBOKEN, NEW JERSEY 07030 • 201-792-2400

REPORT OF TEST

August 4, 1983

CLIENT: Lopat Enterprises, Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln Davis

NUMBER 67890

SUBJECT: Special coating supplied by the client on Aroclor PCB contaminated substrates.

AUTHORIZATION:

Client's verbal of August 1, 1983.

PURPOSE:

Aroclor PCB's after ageing.

PROCEDURE:

A known amount of Aroclor 1242 PCB was added to the cement block and the cinder block in a measured area of 1 x 1 centimeters. Half of the tile sample was also treated with Aroclor 1242. After 72 hours, the special coating was applied to the samples by the client. The coating was then reapplied 24 hours later. After 36 days, the samples were wiped with a 7 cm analytical filter paper that was previously wet with hexane. The wipes were then extracted in a known amount of hexane and aliquots were then injected into a gas chromatograph equipped with an electron capture detector.

The following are the chromatographic conditions used:

Column: 10' x 1/4" 1.5% OV-17/1.95% QF-1 on 80/100 WHP
Column Temperature: 200°C
Electron Capture Detector Temperature: 250°C
Injection Port Temperature: 250°C

A standard of Aroclor 1242 was also injected into the chromatograph for reference purposes.

SIGNED FOR THE COMPANY

BY W. S. Gilman

William S. Gilman



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Form 663

United States Testing Company, Inc.

CLIENT: Lopat Enterprises, Inc.

Numbe

6739(

After 203 days the samples were wiped with a 7 cm analytical filter paper that was previously wet with hexane. The wipes were then extracted in a known amount of hexane and aliquots were then injected into a gas chromatograph equipped with an electron capture detector.

RESULTS:

Aroclor 1242 was not detected in any of the extracts.

The detection limit for Aroclor 1242 is less than 59,000 pica grams/$cm^2$.

* * *

United States Testing Company, Inc.
Chemical Services Division
1415 PARK AVENUE • HOBOKEN, NEW JERSEY 07030 • 201-792-2400

# REPORT OF TEST

June 13, 1983

CLIENT: Lupat
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln Davis

NUMBER 67678

SUBJECT: Special coating supplied by the client on PCB contaminated substrates.

AUTHORIZATION:

Client's verbal of June 2, 1983.

PURPOSE:

Aroclor PCB's after ageing.

PROCEDURE:

A known amount of Aroclor 1242 PCB was added to the cement block and the cinder block in a measured area of 1 x 1 centimeters. Half of the tile sample was also treated with Aroclor 1242. After 72 hours the special coating was applied to the samples by the client. The coating was then reapplied 24 hours later.

After 151 days the samples were wiped with a 7 cm analytical filter paper that was previously wet with hexane. The wipes were then extracted in a known amount of hexane and aliquots were then injected into a gas chromatograph equipped with an electron capture detector.

A standard of Arochlor 1242 was also injected into the chromatograph for reference purposes.

RESULTS:

Aroclor 1242 was not detected in any of the extracts.

The detection limit for Aroclor 1242 is <80,000 pica grams/cm$^2$.

SIGNED FOR THE COMPANY

BY W. S. Gilman

William S. Gilman



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Form 803

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Chemical Services Division
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# REPORT OF TEST

February 7, 1983

NUMBER
67129

CLIENT: Lopat Enterprise, Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln Davis

SUBJECT: One (1) set of coated masonry surfaces submitted and identified by the client as:

Sealer on concrete bricks, patio blocks and marble.

AUTHORIZATION:

Client's verbal of January 17, 1983.

PURPOSE:

To determine the resistance of the coating to wind driven rain, salt fog, acid rain and efflorescence.

PROCEDURES:

Wind driven rain resistance was determined using the Wind Driven Rain Apparatus of Federal Specification TT-C-555C. Coated green and black patio blocks were mounted on the apparatus and subjected to water spray and 5# of air pressure to force the simulated wind driven rain into and through the blocks. The time withstood before water penetration through the bricks was determined and the weight of water gain by the blocks measured.

Salt fog resistance was determined by placing a coated concrete brick in a 5% salt fog cabinet maintained in accordance with ASTM B-117. After 14 days exposure, the brick was visually examined for change. It was also broken open with a hammer to observe penetration.

Acid rain resistance was determined by exposing a coated piece of red marble in a Kesternich unit. The unit was charged with 2 liters each of water, carbon dioxide and sulfur dioxide. After 8 hours in this environment at 38°C and airing overnight in the opened unit, the coating was examined for change.

SIGNED FOR THE COMPANY

BY

William S. Gilman



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CLIENT: Lupat Enterprise, Inc. United States Testing Company, Inc.

Efflorescence resistance was determined using the method of Federal Specification SS-W-110C. A coated cement brick and an uncoated control were placed in 1/2" of sodium sulfate solution (5%) and the amount of efflorescence formed on their surfaces were reported.

RESULTS:

Wind Driven Rain Resistance

After 4 hours exposure on the wind driven rain apparatus, the black coated block exhibited water leaking through its backside and had gained 78 grams of water pickup. Most of its coating appeared to have washed off except for some that was white.

After 5 hours, water leaked through the back of the green patio block. Most of its coating had turned white and was friable. It had gained 77 grams.

Salt Fog Resistance

The coating on the brick appeared to be gone after 10 days of exposure. Considerable penetration appeared to be seen on breaking the brick in two.

Acid Rain Resistance

After 1 cycle in the Kesternich unit, the coating on the marble had all turned into a powdery white material. The material was readily washed off the surface of the marble with a wet soft cloth.

Efflorescence Resistance

The coated brick exhibited no efflorescence on its coated upper surface. On its uncoated sides it showed considerable efflorescence, which was to be expected. The uncoated control brick exhibited considerable efflorescence on its sides and about 1" onto its upper surface.

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**Chemical Division**

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August 19, 1983

Mr. Lincoln Davis
Lopat
640 Mattison
Asbury Park, NJ 07712

Dear Linc,

We have conducted an additional test on the chlordane evaluation on the cinder block to supplement our Report No. 67883.

The cinder block, as you recall, was re-coated with your coating two additional times. The intervals between these latter coatings was 24 hours, as you suggested. The cinder block was then re-wiped with saturated hexane, as conducted before, and the pad was extracted in order to run a GC analysis.

What we then found was 184.3 micrograms/ml of chloradane on that wipe. This, as compared to our previous reading of 1,148.9 on the cinder block initially coated, appears that we are decreasing the count considerably. However, the overall efficiency still has to be explored in order to get a most efficient system.

In the meantime, if I can be of any further assistance, please contact me.

Very truly yours,

UNITED STATES TESTING COMPANY, INC.

W.S. Gilman

William S. Gilman
Vice President

WSG:hg

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Chemical Services Division
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# REPORT OF TEST

January 4, 1983

CLIENT: Lopat
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln R. Davis

NUMBER 67046 -

SUBJECT: Samples were supplied by the client and identified as tile, cement block and cinder block. A special coating was also supplied.

AUTHORIZATION:

To determine if the special coating when applied to the samples covers the presence of Aroclor PCB's.

PROCEDURE:

A known amount of Aroclor 1242 PCB was added to the cement block and the cinder block in a measured area of 1 x 1 centimeters. Half of the tile sample was also treated with Aroclor 1242. After 72 hours the special coating was applied to the samples by the client. The coating was then reapplied 24 hours later. After an additional 24 hours (drying time) the samples were then wiped with a 7 cm analytical filter paper that was previously wet with hexane. The wipes were then extracted in a known amount of hexane and aliquots were then injected into a gas chromatograph equipped with an electron capture detector.

The following are the chromatographic conditions used:

Column: 10' x 1/4" 1.5% OV-17/1.95% QF-1 on 80/100 WHP.
Column Temperature: 200°C
Electron Capture Detector Temperature: 250°C
Injection Port Temperature: 250°C

A standard of Arochlor 1242 was also injected into the chromatograph for reference purposes.

SIGNED FOR THE COMPANY

BY

William S. Gilman



Laboratories in: New York • Chicago • Los Angeles • Tulsa • Memphis • Philadelphia • Detroit

United States Testing Company, Inc.

CLIENT: Lopat

RESULTS:

Aroclor 1262 was not detected in any of the extracts.

The detection limit for Aroclor 1262 is <0.03 $\mu g/cm^2$.

The samples are being retained by United States Testing and will be re-evaluated in one month.

NEW YORK TESTING LABORATORIES, INC.
CALL BOX 1021 75 URBAN AVENUE WESTBURY N.Y. 11590 • (516) 334-7770 • (212) 297-1449 TWX 510 222 0283

Lab. No. 84-71451

Cover Page

RESULTS
OF
CHLORDANE TESTS
FOR

LOPAT ENTERPRISES
640 MATTISON AVENUE
ASBURY PARK, N.J. 07712

31 JANUARY 1984

NEW YORK TESTING LABORATORIES, INC.
CALL BOX 1021, 75 URBAN AVENUE, WESTBURY, N.Y. 11590 • (516) 334-7770 • (212) 297-1449 TWX 510-222-0283

Lab. No. 84-71451

CLIENT: LOPAT ENTERPRISES
640 MATTISON AVENUE
ASBURY PARK, NEW JERSEY 07712

ATTENTION: Mr. L. Flax

CLIENT'S P.O. NO.: Pending

MATERIAL : Room Air and Surfaces

DATE OF TEST : January 31, 1984

New York Testing Laboratories, Inc. conducted a series of tests at , Melville, New York to determine the residual levels of chlordane.

The tests consisted of air samples and surface swab samples.

Air sampling was performed in accordance with NIOSH procedures. Swab samples were obtained utilizing a solvent impregnated filter paper.

The following results were obtained from the tests:

1. Air Samples

| Location | Chlordane, $\mu g/m^3$ |
|---|---|
| Basement | 1.0 |
| Dining Room | 0.2 |
| Living Room near Porch | 0.3 |

Various agencies recommend a maximum 5 $\mu g/m^3$ concentration of chlordane in air for residential places.

# NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-7145

Results - cont'd.

2. Swab Samples

| Location | Chlordane, µg/sq. ft. |
|---|---|
| Wooden Beam, near porch | 2.1 |
| Wooden Beam, near center support | 1.4 |
| Cement Wall | 45.6 |

Various agencies recommend a maximum of 10 µg/sq. ft. on floors and 50 µg/sq.ft. on walls for adults. However, for children occupied homes, the acceptable limit is zero or non-detected.

We certify that this report is a true and authentic report of results obtained from our tests.

Respectfully submitted,

NEW YORK TESTING LABORATORIES, INC.

Prepared by: Benito P. San Pedro
Director - Pollution Control Div.

Approved by: G. J. Horvitz
Chief Officer

gd

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 Lab. No. 84-71451 (A)

CLIENT: Lopat Enterprises
640 Mattison Avenue
Asbury Park, New Jersey 07712

Attention: Mr. L. Flax

CLIENT'S P.O. NO.:

MATERIAL : Room Air and Surfaces

DATE OF TEST : March 2, 1984

New York Testing Laboratories, Inc. conducted a series of tests at Melville, New York to determine the residual levels of chlordane.

The tests consisted of air samples and surface swab samples.

Air sampling was performed in accordance with NIOSH procedures. Swab samples were obtained utilizing a solvent impregnated filter paper.

The following results were obtained from the tests:

1. Air Samples

| Location | Chlordane, $\mu g/m^3$ |
|---|---|
| Basement | 0.3 |
| Dining Room | ND < 0.2 |
| Living Room near Porch | 0.3 |

Various agencies recommend a maximum 5 $\mu g/m^3$ concentration of chlordane in air for residential places.

ND = None Detected

< = Less than

NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-71451

Results - cont'd.

2. Swab Samples

| Location | Chlordane, µg/sq. ft. |
|---|---|
| Wooden Beam, near center support | 0.3 |
| Wooden Beam, 3'-8" from end (porch side) | 0.7 |
| Cement Wall, below porch | 2.0 |

Various agencies recommend a maximum of 10 µg/sq. ft. on floors and 50 µg/sq. ft. on walls for adults. However, for children occupied homes, the acceptable limit is zero or non-detected.

We certify that this report is a true and authentic report of results obtained from our tests.

Respectfully submitted,

NEW YORK TESTING LABORATORIES, INC.

Prepared by: Benito P. San Pedro
Director, Pollution Control Div.

Approved by: G. J. Horvitz
Chief Officer

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Chemical Services Division
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# REPORT OF TEST

February 17, 1983

CLIENT: Lopat
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln R. Davis

NUMBER E7046-2

SUBJECT: Samples were supplied by the client and identified as tile, cement block and cinder block. A special coating was also supplied.

AUTHORIZATION:

Client's letter dated December 22, 1982.

PURPOSE:

To determine if the special coating when applied to the samples covers the presence of Aroclor PCB's.

PROCEDURE:

A known amount of Aroclor 1242 PCB was added to the cement block and the cinder block in a measured area of 1 x 1 centimeters. Half of the tile sample was also treated with Aroclor 1242. After 72 hours, the special coating was applied to the samples by the client. The coating was then reapplied 24 hours later. After 36 days, the samples were wiped with a 7 cm analytical filter paper that was previously wet with hexane. The wipes were then extracted in a known amount of hexane and aliquots were then injected into a gas chromatograph equipped with an electron capture detector.

The following are the chromatographic conditions used:

Column: 10' x 1/4" 1.5% OV-17/1.95% QF-1 on 80/100 WHP
Column Temperature: 200°C
Electron Capture Detector Temperature: 250°C
Electron Capture Detector Temperature: 250°C
Injection Port Temperature: 250°C

A standard of Aroclor 1242 was also injected into the chromatograph for reference purposes.

* * *

SIGNED FOR THE COMPANY
BY
William S. Gilman



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Form 863

CLIENT: Lupat

United States Testing Company, Inc.

RESULTS:

Aroclor 1242 was not detected in any of the extracts.

The detection limit for Aroclor 1242 is <25,000 pica grams/$cm^2$.

United States Testing Company, Inc.
Chemical Services Division
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# REPORT OF TEST

May 31, 1983

CLIENT: Lupat Enterprises, Inc.
640 Mattison Avenue
Asbury Park, NJ 07712
Attention: Mr. Lincoln R. Davis

NUMBER 67619

SUBJECT: One sample submitted and identified by the client as One system of K-20 consisting of two small cans, the ingredients of which were mixed on a one to one (1 : 1) volume basis.

AUTHORIZATION:

In person May 17, 1983.

PURPOSE:

Determination of fire retardancy of the system per ASTM D-1360.

PROCEDURE:

Fire retardancy of Paints (Cabinet Method) - ASTM D-1360.

Test panels were coated with one brush coat of the reacted system equal to 2.0 ft² per gallon.

Panels were allowed to air dry at room temperature for 48 hours until completely dry.

SIGNED FOR THE COMPANY
BY
William S. Gilman



Laboratories in: New York • Chicago • Los Angeles • Tulsa • Memphis • Philadelphia • Richland

United States Testing Company, Inc.

CLIENT: Lopat Enterprises, Inc.

Number 67619

RESULTS:

| Panel No. | Weight (initial) | Weight (final) | Weight Loss |
|---|---|---|---|
| 1 | 202.59 gms. | 188.55 gms. | 14.04 gms. |
| 2 | 203.69 " | 192.36 " | 11.33 " |
| 3 | 137.90 " | 124.78 " | 13.12 " |
| 4 | 126.13 " | 116.18 " | 9.95 " |
| 5 | 184.26 " | 169.96 " | 14.30 " |
| | | Total | 62.74 " |

Average Loss = 12.55 gms.

| Panel No. | Dimensions of Char, in. | Char Vol. $In.^3$ |
|---|---|---|
| 1 | 10.25 x 4.25 x .25 | 10.89 |
| 2 | 9.5 x 4.25 x .25 | 10.09 |
| 3 | 10.0 x 4.75 x .25 | 11.88 |
| 4 | 10.25 x 4.25 x .25 | 10.89 |
| 5 | 10.375x 4.25 x .25 | 11.02 |
| | Total | 54.77 |

Char Volume Avg. $In.^3$ = 10.95

Char Volume Avg. cc = 179.48

COMMENT:

This system exhibits flame retarding properties as indicated by the test results obtained.

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Lab. No. 83-70065

CLIENT:

CLIENT'S P.O. NO.: Pending

MATERIAL: Room Air

TEST FOR: Chlordane

DATE OF TEST: September 12, 1983

New York Testing Laboratories, Inc. conducted a room air test at Locust Valley, New York, to determine the residual levels of Chlordane.

Sampling and analysis were conducted in accordance with standard NIOSH procedures.

The following results were obtained:

| Location | Chlordane, $\mu g/m^3$ |
|---|---|
| Living Room - North Wall | ND < 0.5 |
| Bedroom - North Wall | ND < 0.5 |
| Basement - East Wall | 23.8 |

ND = None detected

< = Less than

NEW YORK TESTING LABORATORIES, INC.
P.O. BOX 484, 81 URBAN AVENUE, WESTBURY, L.I., N.Y. 11590 • (516) 334-7770 • (212) 297-1448



Lab. No. 83-70683

CLIENT: Lopat Enterprises, Inc.
640 Mattison Avenue, Suite 200
Asbury Park, New Jersey 07712

CLIENT'S P.O. NO.: Pending

MATERIAL : Room Air

TEST FOR : Chlordane

DATE OF TEST : Novemver 17, 1983

New York Testing Laboratories, Inc. conducted a room air test at Locust Valley, New York to determine the residual levels of Chlordane.

Sampling and analysis were conducted in accordance with standard NIOSH procedures.

The following results were obtained:

| Location | Chlordane, $\mu g/m^3$ |
|---|---|
| Den | ND < 0.5 |
| Basement - West Wall | 3.5 |
| Basement - East Wall | 3.1 |

ND = None Detected

< = Less than

NEW YORK TESTING LABORATORIES, INC.



Lab No. 83-70683

The National Academy of Sciences and the Department of Defense conducted studies on the use of Chlordane in residential places. Both groups are currently recommending a maximum level of 5 $\mu g/m^3$ for Chlordane.

We certify that this report is a true and authentic report of results obtained from our tests.

Respectfully submitted,

NEW YORK TESTING LABORATORIES, INC.

Prepared by: Benito P. San Pedro
Director, Pollution Control Div.

Approved by: G. J. Horvitz
Chief Officer

eg

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CALL BOX 1021, 75 URBAN AVENUE, WESTBURY, N.Y. 11590 • (516) 334-7770 • (212) 297-1449 TWX 510-222-0763

Lab. No. 84-71789(A)

P.O. No. Pending

REPORT OF ANALYSIS

FOR

LOPAT ENTERPRISES INCORPORATED
640 HATTISON AVENUE
ASBURY PARK, NEW JERSEY 07712

MAY 6, 1984

NEW YORK TESTING LABORATORIES, INC.



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# NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-71789(A)

1.0 REFERENCES

1.1 Client purchase order number: Pending

1.2 Lab. No. 84-71789(A)

1.3 Identification and listing of Hazardous Waste. Federal Register, Vol. 45 No. 98, May 19, 1980.

1.4 Handbook for analytical Quality Control in Water-Wastewater Laboratories - EPA-600/4-79-019, March, 1979.

2.0 DESCRIPTION OF TESTS

2.1 E P Toxicity: Ref. 1.3 para. 261.24

Identifies materials whose constituents may have a tendency to leach or migrate when disposed of improperly. The liquid phase of a sample is separated. The solid phase is extracted at pH5 with aqueous acetic acid for 24 hours. The extract is combined with the liquid phase and analyzed.

3.0 TEST REQUIREMENTS

1. E P Toxicty - Lead

4.0 SAMPLE IDENTIFICATION

010-03184-01A Ref: Texas

NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-71789(A)

5.0 SAMPLE IDENTIFICATION AND RESULTS

010-03184-01A Ref: Texas

RESULTS

The submitted soil sample was combined with new mix K20-Hardner.

Portions of the above slurry were mixed with various combinations of admixtures of Portland Cement Type 1 in proportions of 5, 10, 15, 20%. These were cured in an oven at 120°F for one week. Cured samples were pulverized and extracted using E P Toxicity Test procedure.

The soil was also extracted.

The following samples were tested:

1) Soil

2) K20 + Soil

3) K20, Soil and 5% Portland Cement

4) K20, Soil and 10% " "

5) K20, Soil and 15% " "

6) K20, Soil and 20% " "

| Sample Identification | Lead Results in PPM |
|---|---|
| 1 | 200. |
| 2 | 10 |
| 3 | 0.4 |
| 4 | 1 |
| 5 | 0.4 |
| 6 | 0.1 |

Lead requirements: 5.0 max.

# NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-71789(/

6.0 CONCLUSION

The new K20 mix is very efficient to encapsulate Lead in the submitted soil.

7.0 CERTIFICATION AND SIGNATURES

Report prepared by:

Remo Gigante
Laboratory Dirctor

We certify that this report is a true report of results obtained from our tests of this material.

Respectfully submitted,

NEW YORK TESTING LABORATORIES, INC.

G. J. Nowicz, Chief Officer

Att: Mr. Louis Flax Suite 200

jw

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Lab. No. 84-73419

P.O. No. Verbal - Mr. G. Gigonda

RESULTS
OF
NATURAL AND ENCAPSULATED ASBESTOS FIBERS

FOR

LOPAT ENTERPRISES
640 MATTISON AVENUE
ASBURY PARK, NEW JERSEY 07712

AUGUST 6, 1984

NEW YORK TESTING LABORATORIES, INC.
CALL BOX 1021, 75 URBAN AVENUE, WESTBURY, N.Y. 11590 • (516) 334-7770 • (212) 297-1449 TWX 510-222-0283

Lab. No. 84-73419

| | |
|---|---|
| CLIENT: | Lopat Enterprises<br>640 Mattison Avenue<br>Asbury Park, New Jersey 07712<br><br>Att: Mr. G. Gigonda |
| MATERIAL: | Natural and Enscpsulated Asbestos Fibers |
| MARKED: | K 20 |
| SUBMITTED FOR: | Photomicrographs |

Two samples of asbestos fibers were submitted. One was in the natural fiber condition and the other was encapsulated.

Slides were prepared for processing photomicrographs at 250X and 550X.

NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-73419

PHOTOMICROGRAPHS

PHOTO NO. 1
MAG. 250X
NATURAL FIBERS

Dark patches are debries

NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-73419

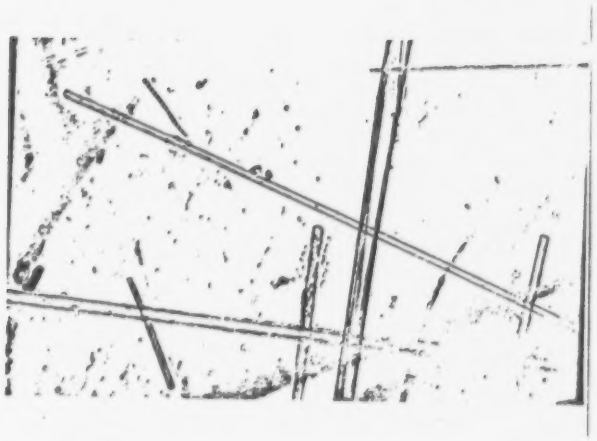

PHOTO NO. 2
MAG. 550X
NATURAL FIBERS

NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-73419

PHOTO NO. 3

MAG. 250X

Fiberts through center are completely covered with encapsulation material.

Exposed fibers are enlared.

NEW YORK TESTING LABORATORIES, INC.



Lab No.84-73419

PHOTO NO. 4

MAG. 550X

Dark areas exhibit completely enclosed fibers.

Exposed fibers are enlarged.

NEW YORK TESTING LABORATORIES, INC.



Lab No. 84-73419

CERTIFICATION

We certify that this report is a true report of results obtained from our tests of this material.

Respectfully submitted,

NEW YORK TESTING LABORATORIES, INC.

G. D. Horvtiz, Chief Officer

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# GUIDELINES FOR DECONTAMINATING BUILDINGS, STRUCTURES AND EQUIPMENT AT SUPERFUND SITES

**M.P. ESPOSITO**
**J. McARDLE**
**J.S. GREBER**
PEDCo Environmental, Inc.
Cincinnati, Ohio
**R. CLARK**
Battelle Columbus Laboratories
Columbus, Ohio

## INTRODUCTION

CERCLA established a dual-phase program for responding to environmental problems caused by hazardous substances. The "removal program" involves cleanup or other actions taken in response to emergency conditions or on a short-term or temporary basis. The "remedial program" involves response actions that tend to be long term in nature and permanently remedy problem sites.

To be eligible for cleanup under Superfund, a site must be included on the National Priorities List (NPL). As of this writing, 406 sites appear on the NPL which was promulgated by the USEPA on Sept. 8, 1983. Currently, the USEPA is proposing the addition of 133 new sites to the list.

As the number of sites on the NPL grows and as removal and remedial activities at Superfund sites accelerate, the task of decontaminating buildings, structures and construction equipment will become increasingly important. These items often represent large capital investments, and the costs of dismantling and disposing of such structures in a secure landfill can be very expensive. The objective of an effective decontamination program, therefore, is to return contaminated buildings, structures and equipment to active, productive status.

This study had as its goal the development of a general guide for government personnel, cleanup contractors and other individuals responsible for planning and executing decontamination activities at Superfund sites.

## TECHNICAL APPROACH

In the fall of 1983, a survey was made of ongoing decontamination activities at 50 Superfund sites across the country. These sites were thought to have potentially contaminated buildings, structures and equipment, and this survey was conducted to gather information on: (1) the types of contaminants of most concern and (2) the methods currently being proposed for use for decontamination of the buildings, structures and equipment in place at these sites. Contractors and numerous other individuals with direct experience in both Superfund and non-Superfund related programs involving decontamination of dioxins, explosives, PCBs and other toxic wastes from buildings and equipment were contacted. In addition, a thorough search of published literature for information on decontamination methods was conducted through computerized search services.

From these surveys, a decontamination data base containing state-of-the-art information on specific cleanup methods and their [illegible] as guidelines for developing site-specific cleanup developed.

## RESULTS

The 1983 survey of building/equipment decontamination practices at Superfund sites revealed that the contaminants of most concern at these sites included: asbestos, acids and alkalis, dioxins, explosives, heavy metals, cyanides, low-level ionizing radiation, organic solvents, pesticides and PCBs. The methods used to remove these substances from buildings, structures and equipment are few in number and rarely documented in detail. For example, it is common practice to steam clean equipment such as backhoes, bulldozers and drilling augers, but testing to verify that the contaminants of concern have been adequately removed is generally not performed.

Contaminated buildings and structures are seldom cleaned and returned to active use. More often they are abandoned and secured to prevent further entry and exposure until sometime in the future when a solution regarding their disposition can be found. Some buildings are torn down and buried in landfills. Contaminated underground structures such as tanks, sumps and sewers are sometimes filled in place with concrete to prevent their reuse.

Because these findings clearly pointed to the need for basic guidance material on decontamination methods, the remainder of the project was devoted to developing a manual or user's guide for this purpose. The handbook which was developed presents general guidelines for developing a rationale and strategy (Fig. 1) for dealing with the prospect of decontamination including guidance and information for selecting the least-costly method(s) that are technologically feasible and that will effectively reduce contamination to predetermined levels. Steps in the process include: (1) determining the nature and extent of contamination; (2) developing and implementing a site-specific decontamination plan; and (3) evaluating decontamination effectiveness.

*Step 1*

- Querying former employees, searching old business records, inspection reports and news stories
- Conducting a visual site inspection
- Collecting and analyzing samples from the contaminated surfaces or structures

*Step 2*

- Identifying the future intended use of buildings, structures and equipment
- Establishing decontamination target levels for the contaminants present
- Identifying and evaluating potential decontamination methods
- Selecting the most appropriate method(s) for achieving the decontamination target levels

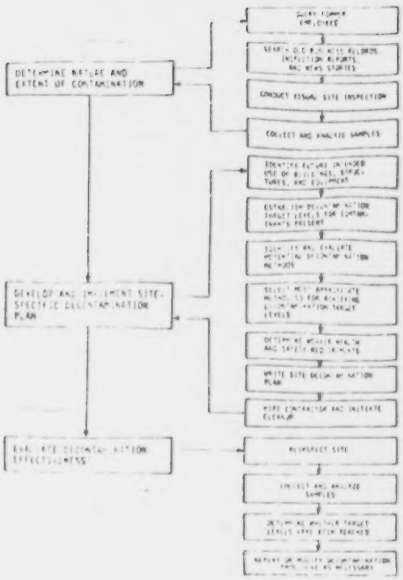

Figure 1
Flow Diagram Illustrating Sequence of Steps for Developing a Decontamination Strategy

- Determining worker health and safety requirements (training, medical surveillance, personal protective equipment, site safety)
- Writing the site decontamination plan
- Estimating costs
- Hiring the contractor and initiating cleanup

*Step 3*

- Reinspecting the site for evidence of residual contamination
- Collecting and analyzing samples from the decontaminated area
- Determining whether the target levels for residual contamination have been reached
- Repeating and, if necessary, modifying the decontamination procedures until satisfactory results are obtained

Descriptions of actual building decontamination efforts at both Superfund and non-Superfund sites are included as case studies in the report.

The manual contains process descriptions for 21 decontamination methodologies including both traditional and developmental techniques (asbestos abatement, absorption, demolition, dismantling, dusting/vacuuming/wiping, encapsulation, gritblasting, hydroblasting/water washing, painting/coating, scarification, RadKleen, solvent washing, steam cleaning, vapor phase solvent extraction, acid etching, bleaching, flaming, drilling and spalling, K-20, microbial degradation and photochemical degradation). The usefulness of each cleanup method with various combinations of contaminants and materials is given.

Potential cleanup methods are identified in a two-dimensional matrix (Table 1) matching contaminants (asbestos, acids, alkalis, dioxins, explosives, heavy metals and cyanides, low-level radiation, organic solvents, pesticides, PCBs and all contaminants in liquid form) with materials/surfaces (all wall, ceiling and floor surfaces; glass; plastic; metal; wood; brick; concrete; aluminum; and equipment and auxiliary structures).

Finally, the manual describes safeguards for protecting the health and safety of decontamination workers during site operations. Topics covered include personnel training, medical surveillance, personal protective equipment and site safety.

## CONCLUSIONS AND RECOMMENDATIONS FOR ADDITIONAL RESEARCH

As a result of this study, it has become clear that all future owners of decontaminated buildings and structures on Superfund sites

Table 1
Potential Decontamination Methods for Various Contaminant/Material Combinations*

| Material/surface | Contaminant: Asbestos | Acids | Alkalis | Dioxins | Explosives | Heavy metals and cyanide | Low level radiation | Organic solvents | Pesticides | PCB's | All contaminants in liquid form |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All wall, ceiling, and floor surfaces | 1,3,4,5 | 3,4,6,9, 10 | 3,4,6,9 | 3,4,5,6,9, 21 | 3,4,6,9,11 | 3,4,5,6,9, 9,10 | 3,4,5,6,9 | 3,4,6,9 | 3,4,6,9,11 | 3,4,5,6,9 | 3 |
| Glass | 1,3,4,5 | 3,4,6,9,10 | 3,4,6,9 | 3,4,5,6,9,21 | 9,10 | 3,4,5,6,9,9,10 | 9 | 3,4,6,9 | 10 | 3,4,5,6,9 | 3 |
| Plastic | 1,3,4,5 | 3,4,6,9,10 | 15 | 15 | 8,15,16 | 15 | 8,15 | 15 | 15,16 | 15 | 3 |
| Metal | 1,3,4,5 | 3 | 7,15 | 7,15 | 7,8,15,16, 17 | 7,15 | 7,8,15 | 7,15 | 7,15,16 | 7,15 | 2 |
| Wood | 1,3,4,5 | 3 | 7,15 | 7,15 | 7,15,16,20 | 7,15 | 7,15 | 7,15 | 7,15,16,20 | 7,15,19 | 2 |
| Brick | 1,3,4,5 | 3 | 7,15 | 7,15 | 7,8,15,17, 20 | 7,15 | 7,8,15 | 7,15 | 7,15,20 | 7,15,19 | 2 |
| Concrete | 1,3,4,5 | 3,10,18 | 3,10,15,18 | 3,10,15,18 | 7,8,15,15, 16,17,18, 20 | 3,10,15,18 | 5,7,8,15, 15,17,18 | 3,10,15,18 | 3,10,15,16 18,20 | 3,10,15,16, 18 | 3 |
| Equipment and auxiliary structures (bulkheads, electrical transformers and switchgear, pumps, ventilation ducts, etc.) | 1,5 | 4,6,11,12 18 | 4,6,11,12 18 | 4,5,6,11, 12,13,21 | 4,6,8,12, 12,13,17 | 4,5,6,7,8, 11,12,13 | 4,6,8,11, 17,18 | 4,6,11, 12,13 | 4,6,11, 12,13 | 4,6,8,11, 12,13,19 | 3 |

*Key for decontamination methods:

1. Asbestos abatement
2. Absorption
3. Demolition
4. Dismantling
5. Dusting/vacuuming/wiping
6. Encapsulation
7. Abrasive grit blasting
8. Hydroblasting/waterwashing
9. Painting/coating
10. Scarification
11. RadKleen
12. Solvent washing
13. Steam cleaning
14. Vapor phase solvent extraction
15. Acid etching
16. Bleaching
17. Flaming
18. Drilling and spalling
19. K-20 leaching
20. Microbial degradation
21. Photochemical degradation

Each cell in the matrix represents a specific contaminant/substrate combination and contains numbers corresponding to decontamination methods that either have been used in the specific circumstances, or have the potential for such use, based on a critical examination of the published literature. Each method may be used alone or in conjunction with one or more of the other procedures.

should be advised of the nature of the contamination that was present, the cleanup methods used and levels of any residual contaminants. Ensuring the transfer of such information from one site owner to the next will require a method for permanently recording this information. Regulations requiring the addition of such information to the property deed, as is required in the deed of all RCRA-permitted facilities, may be a workable solution.

The handbook which was developed will provide much of the guidance needed by site cleanup personnel for decontaminating buildings, structures and equipment. However, additional research is needed to bridge gaps in the state of the art in four key areas. First, and perhaps most importantly, sampling methods for determining the type and degree of contamination existing on building/structure/equipment surfaces, both before and after cleanup efforts, are poorly developed, documented and verified. Similarly, subsurface sampling techniques (such as corings) for determining the depth of contamination in porous substances (such as concrete or wood floors) have not been adequately developed and documented. Although "wipe tests" are often referred to, in site records, the actual methodology used is rarely described in enough detail to allow simulation or reproduction by others, and the technique itself is known to be inadequate for quantitatively transferring contaminants from surfaces to wipes or swabs. Additional research in this area is badly needed.

Second, many of the decontamination techniques described in the manual were developed specifically by the U.S. Army's Installation Restoration Program. Their applicability to contaminant/material combinations encountered at Superfund sites has not been fully explored. Even where decontamination techniques are indicated for certain contaminant/material combinations, the more detailed methodology descriptions should be consulted for any future work that may be required before the methods are selected.

Third, the effectiveness of many decontamination methods currently in use has not been verified and documented. For example, the degree to which steam cleaning removes dioxin-contaminated soil particles from drilling augers has not been established. Decontamination methods that have not previously been applied to specific contaminant/substrate combinations but show a strong potential applicability should be validated in pilot investigations. Additions/deletions to the matrix should be made accordingly. New decontamination technologies that become available also should be evaluated and added to the matrix.

Fourth, a formal, systematic approach for determining acceptable levels of contaminants remaining in and on building and equipment surfaces does not currently exist. As a result, guidance on the "How clean is clean?" issue and the establishment of target levels could not be included in this manual and must continue to be addressed on a case-by-case basis.

## ACKNOWLEDGMENTS

This work was funded by the USEPA, Municipal Environmental Research Laboratory, Solid and Hazardous Waste Research Division, Cincinnati, Ohio under Contract No. 68-03-3190. Ms. Naomi P. Barkley was the Project Officer. Others contributing to the work were Ann Crone and Mike Hessling of PEDCo and Ann Langham, Cindy McCandlish, Scott Brown and John B. Hallowell of Battelle.

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The Daily Register

VOL 106 NO 102 YOUR HOMETOWN NEWSPAPER SINCE 1878 MONDAY OCTOBER 31 1983 • 25 CENTS

# EPA delays use of PCBs sealant

BRADLEY BEACH (AP) — A self-made inventor says that after "impressive" private test results bureaucratic red tape is stalling the sanctioning of a substance which supposedly seals off PCBs in contaminated buildings.

Louis Flax said a member of his firm, Lopat Enterprises, originally developed the substance, called K-20, to seal off a friend's basement from water seepage.

Tests conducted by the United States Testing Co. showed that K-20 dissolved polychlorinated biphenyls in cinder, concrete and title blocks, Flax, 58, said yesterday in a telephone interview from his home.

The inventor said that a the owners of PCB-contaminated office building in San Francisco applied K-20 about a month after an expensive scrubbing procedure failed to lower the concentration of the hazardous chemical. He added that after a "rub with K-20, the concentration fell by half.

Flax said after spending about $75,000 on testing the substance, he has run out of funds.

"These tests are extremely expensive and we just don't have that kind of money," he said.

The inventor claimed the material is what industry is looking for. But, he added, even if he could afford additional testing on his own, most industries would wait for a seal of approval from the Environmental Protection Agency before using the product.

After a meeting between Flax and EPA officials an EPA research and development senior staff engineer said K-20 has the potential for "the stabilization, encapsulation and fixation of the PCB in soil and is worth spending federal funds to test it."

EPA engineer Paul DesRosiers said he was frustrated that federal Superfund money had not been appropriated to carry out the necessary tests, which would cost about $60,000.

Another senior official, Joel Hirschhorn, of the Congressional Office of Technology Assessment, said the private laboratory's test results on K-20 are impressive.

Hirschhorn said that if test results indicating K-20 works on PCBs are accurate, it is likely the substance would work on dioxin as well.

"There are a lot of similarities between PCBs and dioxin," he said.

Hirschhorn said that of all the new technologies to combat PCBs, this is the most interesting one.

Flax, who describes himself as a jack of all trades, but master of none, and who has been a typesetter and record producer, holds no college degrees. Only one of the three employees of Lopat Enterprises does — Lincoln Davis, 32, of Lincroft, who holds a B.S. in environmental science and who designed K-20.

Flax said he holds two patents for push-button telephone locks.

*The Commonwealth of Massachusetts*
*Department of Food and Agriculture*
*Leverett Saltonstall Building, Government Center*
*100 Cambridge Street, Boston 02202*

June 1, 1984

Enclosed are copies of the laboratory reports showing the results of the Chlordane air and wipe samples taken at your home on May 8th and May 11th, 1984.

The following table summarizes the results:

-SUMMARY OF CHLORDANE ANALYSIS-

| May 8th, 1984 Pre K-20 Application* | | May 11th, 1984 Post-K-20 Application | |
|---|---|---|---|
| **Wipe Samples** | | | |
| Surface | Chlordane Concentration (micrograms/square ft. $ug/ft^2$) | Surface | Chlordane Concentrate ($ug/ft^2$) |
| Formica | ND** | Wood (under formica) | ND |
| Wood (cupboard) | 628 | Wood (cupboard) | 83 |
| Floor | 1037 | Floor | ND |
| **Air Samples** | | | |
| Room air | 8 micrograms ($ug/m^3$) cubic meter | Room air | 4 $ug/m^3$ |

*=K-20 Application took place on May 8th
**=None detected

The National Academy of Sciences has established a guideline for chlordane in air at a concentration of 5 micrograms per cubic meter ( 5 $ug/m^3$ ).

According to a New York Testing Laboratories report, "various agencie"recommend the following guidelines for chlordane concentrations on surfaces.

10 $ug/ft^2$=floors
50 $ug/ft^2$=walls

0 ug/ft$^2$-children occupied houses.

It should be noted that the chlordane concentrations found in the wipe samples collected at your home are reported in concentration per square foot in order to compare them to the above guidelines. The concentrations found were as follows:

May 8th - 433 ug/.69 sq ft. (628)
575 ug/.57 sq ft. (1027)
May 11th - 57 ug/.69 sq ft. (83)

The limit of detection for the analysis of the air samples was 1 ug/m$^3$ and for the wipe samples between 10 and 15 ug.

Copies of the cover letter only were sent to the individuals mentioned below; they did not receive copies of the reports.

If you have any questions, please call me at 617-727-2863.

Sincerely,

Louis Scarano

Louis Scarano
Acting Registration Specialist

cc: Abraham Kuiper, Bram Pest Control
Louis Flax, Lopatt Enterprises
Jim White, Chairman, Structural Pest Control Advisory Council to Mass. Pesticide Board.

An International Weekly Newsletter on Hazardous Materials and Hazardous Wastes

# Hazardous Materials Intelligence Report

ARTICAL IN THE NOVEMBER 4TH EDITION, VOL. IV, NO.43- 1983

• An inorganic chemical sealer, being developed by Lopat Enterprises of Asbury Park, New Jersey, which can encapsulate and immobilize toxic organic chemicals. (HMIR, 4 Nov. 1983, p.2.) The process has not yet been proven effective on contaminated soil, but Lopat estimates that if it did prove effective on soil, it would cost approximately $200 million to treat Missouri's 500,000 tons of soil.

ARTICAL IN THE DECEMBER 23RD EDITION, VOL.IV, NO.50- 1983

## House subcommittee hears testimony on waste disposal alternatives

On 27 October, the Small Business Subcommittee on Energy, Environment and Safety of the U.S. House of Representatives held a hearing on alternatives to conventional land disposal of hazardous wastes in an effort to gather information that would help the committee determine how it could best promote the development of such alternatives, especially by small businesses. Witnesses included representatives from business as well as from EPA and the Office of Technology Assessment (OTA) of the U.S. Congress. Committee chairman, Representative Ike Skelton (Democrat-Missouri), declared in his opening statement that the lengthy and complicated procedures that businesses must follow to obtain permits for hazardous waste disposal, combined with the lack of EPA regulations governing new technologies, are "stifling" the development of alternatives to conventional waste disposal methods. An OTA representative, arguing that a market exists for innovative technologies for treating wastes and reducing the amounts of wastes generated, recommended that EPA remove regulatory obstacles that have discouraged companies from entering this market. An EPA representative explained EPA's research program on hazardous waste management, described EPA's procedures for issuing permits for research and experimental facilities, and suggested modifying the 1976 Resource Conservation and Recovery Act (RCRA) in such a way as to expedite the issuance of permits for experimental facilities.

Several business representatives described possible new technologies that their companies have developed for waste disposal, and they explained some of the problems that their companies have encountered in trying to obtain permits for putting these technologies into practice. Louis Flax, president of Lopat Enterprises, Inc. of Asbury Park, New Jersey, described to the committee a formula for preparing K-20, a substance that Lopat has developed to encapsulate polychlorinated biphenyls (PCBs). Flax said that as early as January 1983, Lopat's testing had shown that K-20 effectively contains PCBs. Flax recounted Lopat's efforts to bring this new technology to EPA's attention, and he said that Lopat had been told that EPA could not issue a permit for the process because EPA had no regulations governing that type of technology. Flax explained to the committee that Lopat had been asking EPA, not for government money, but for authorization to conduct tests intended to demonstrate to industry, state governments, and EPA that K-20 is effective in treating PCBs.

PAGE 19
MONDAY, AUGUST 15, 1983

THE WALL STREET JOURNAL.

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# Waste Producers, Disposers Delay Move to Better Treatment Methods

By Hal Lancaster
And William M. Bulkeley
Staff Reporters of The Wall Street Journal

Even though garbage can be treated, burned, reused, encapsulated, stabilized or neutralized, 80% of it ends up in the ground in landfills that are likely to leak.

Eventually, though, land disposal will have to be cut back drastically because a great deal of that waste is toxic and endangers drinking water. "There is a trend toward producing less waste and using treatment instead of land disposal," says Joel Hirschhorn of the congressional Office of Technology Assessment. "But it's slow and uncertain."

High costs, public outcry, regulations, and a lack of will on the part of taxpayers and politicians have hampered the spread of safer methods of handling hazardous wastes. The industry is interested in making a profit in the most economical way at the least risk, says Frank J. Freestone, a hazardous waste researcher for the Environmental Protection Agency. "Right now, there's a lot of risk involved in designing and siting a facility. Why should a company take a technological risk along with other risks?"

Europe's example proves that dangerous substances can be disposed of more safely. While the U.S. burns just 16% of its waste, Europe burns as much as 50%, according to a 1981 study by the North Atlantic Treaty Organization.

"The Europeans are well ahead of us," says David A. Sharp, an environmental researcher at Battelle Laboratories Inc. "Land in general is dearer in Europe than in the U.S., so there's a tendency to stay away from land-intensive landfills."

## Regulations Trail Advances

Companies in the U.S. are discouraged from using better methods partly because EPA regulations tend to lag behind the advances. "It's hard to consider using technology for which there are no regulations," Mr. Hirschhorn says, since restrictive future measures could imperil the investment. Regulators, though, say they can't develop standards until there are facilities on which to base them. "It's a Catch-22," Mr. Hirschhorn says.

The problems besetting the EPA's seven-year-old mobile incinerator project illustrate the obstacles. Like most disposal methods, mobile incinerators have limits, but they avoid two major problems that trip up other approaches. There are no neighbors to antagonize, and they don't create layers of spills and leaks in populated areas because they don't require long-distance transport of waste.

The EPA, which has given contractors to produce the devices, said more than 30 companies have expressed interest. Some chemical companies are considering plans to install support equipment at several sites and then transport the core of the incinerator among them.

So far, though, nobody has made a commitment to a commercial project because the agency's maze of regulations, along with conflicting state rules, has turned the project into a bureaucratic nightmare. "Under the Toxic Substances Control Act," says Mr. Freestone, the EPA researcher, "we have to reapply for permits every time we move from one region to another." For just a trial burn, the agency had to obtain nine permits.

Companies, therefore, remain reluctant. "If the EPA can't conquer its own process," Mr. Freestone says, "there's no reason for them to jump in." The agency is working on a national permit that would reduce some red tape, but disparate state regulations still pose problems.

By contrast, European countries have embraced several advanced disposal methods. A number of mobile incinerators are operating commercially there. West Germany burns or detoxifies nearly 80% of its wastes, says a California report on alternatives to land disposal. Several European countries, including West Germany and France, subsidize incinerator construction.

Chemfix Technologies Inc. of Kenner, La., markets a substance that chemically converts certain hazardous wastes into an inert, claylike material. But, says Daniel N. Silverman Jr., chairman, "It is embarrassing for me to say that our Chemfix process is used more in the Turin Milan industrial corridor than all of the 50 states together."

> *"There's a lot of risk involved in designing and siting" a waste-treatment plant, says an EPA official. "Why should a company take a technological risk along with other risks?"*

As public discontent intensifies, though, the U.S. may be forced to catch up. New state and federal laws under consideration would increase the use of treatment and incineration.

California, for instance, has banned, after specified times, the burial of certain dangerous wastes if acceptable alternative disposal methods exist in the area. Other proposals would make landfills less attractive by increasing their cost.

A report by the Office of Technology Assessment calls for a sliding-scale tax on waste producers that would fall most heavily on those who produce the most dangerous wastes. The additional cost of perpetual care and monitoring of landfills, as it is required for graves, would make alternatives more competitive, says industry consultant Edward W. Kleppinger.

Current regulations require ground-water monitoring for 30 years after closing a landfill. "Landfilling is 50% to 60% of the cost of incineration," Mr. Kleppinger says. "But if you add in perpetual care costs, incineration and other treatment becomes cheaper."

Larger capital outlays and often-stiffer siting requirements have hurt incinerators, according to officials of SCA Services Inc. in Boston, which has been losing money on its $20 million state-of-the-art incinerator in Chicago. "The system clearly discourages a generator from choosing treatment over land disposal," says George Kush, an SCA vice president.

Most of the advanced waste technologies face considerable economic, technological or regulatory obstacles. Incinerators seem to be the technology of choice, but they won't burn inorganic material, and there's often a lot of opposition to siting them. Molten salt reactors burn efficiently but corrode badly. Creating salt domes in stratified rock shows promise, Mr. Hirschhorn says, because "you can retrieve things if they have value at some later point." But the public "sees it as another form of land disposal," he says.

Nevertheless, plenty of entrepreneurs and inventors are interested in the multi billion dollar cleanup market that is expected to develop in the next decade.

## Treating Toxic Wastes

Louis Flax would like part of it for his tiny Lopat Enterprises Inc. in Bradley Beach, N.J. The company has developed a substance that penetrates contaminated materials and encapsulates toxic waste. "We're not sure why, but it renders it ineffective," says Mr. Flax.

Through his congressman, Mr. Flax met Mr. Hirschhorn, who found the process a "fascinating cleanup technology" and set up meetings with the EPA that led to a series of tests. So far, Mr. Flax says, testing has been successful on a variety of toxic chemicals, including dioxin, chlordane and polychlorinated biphenyls. A test on dioxin-contaminated soil from Times Beach, Mo., is planned.

The biggest dent in the mounting pile of hazardous waste will probably be made by reduction and recycling efforts. There is a growing market, for instance, for recycled solvents. Monsanto sells more than 20 wastes generated in its manufacturing processes. The most successful has been dibasic acid, a waste it sells for use in scrubbing pollutants from industrial flue gases.

## Common-Sense Ideas

Advanced manufacturing techniques are also expected to reduce toxic waste production. New plating processes in the electroplating industry, for example, have eliminated the need for certain toxic materials.

But some of the reduction will come from fairly low technology, common sense ideas, like cleaning up more assiduously. Battelle's Mr. Sharp tells of a pesticide maker that used a machine to separate vermiculite from [illegible]. "The machine also was used to clean up spills, mixing them in the process with the sand and creating hazardous waste. The simple solution: Use a separate vacuum.

"We're seeing wider interest from our contract work and from talking to people in the industry in avoiding the generation of waste," Mr. Sharp says. "In the long run, it's going to be cheaper than disposing of it. You could probably get rid of half of what you currently generate, maybe even more."

RECEIVED APR 20 1984

Title: PRACTICAL METHODS FOR DECONTAMINATING BUILDINGS, STRUCTURES, AND EQUIPMENT AT SUPERFUND SITES

Authors: Naomi P. Barkley, Municipal Environmental Research Laboratory, U.S. Environmental Protection Agency
M. Pat Esposito, PEDCo Environmental, Inc.
Judy L. McArdle, PEDCo Environmental, Inc.

Abstract:

This paper will describe the results of a recent EPA study of methods for decontaminating buildings, structures, and equipment at Superfund sites. Types of contaminants most likely to occur in buildings and structures at such sites or on clean-up equipment such as bulldozers or drilling augers include heavy metals and cyanides, organic solvents, dioxins, polychlorinated biphenyls, asbestos, low level radiation, pesticides, explosives, acids, and alkalis. Several types of decontamination methods for treating or removing these contaminants were identified and evaluated; these methods included vaccuuming, grit blast, scarification, water wash/hydroblast, steam cleaning, acid etching, solvent wash, vapor degreasing, photolysis, asbestos removal, encapsulation/barrier treatments, K-20 Radkleen, flaming, drill and spall, dismantling, and demolition.

A decision-making process was developed and is recommended as a tool for selecting the most appropriate decontamination strategy or approach for a given situation. Using this process, site owners or government agents can determine the most efficient, practical, and safe course of action for decontaminating buildings and structures, based on careful consideration of eight key factors: 1) proper identification of contaminants and residual levels before cleanup, 2) evaluation of the hazardous likely to be associated with exposure to the contaminants, 3) determination of future intended use(s) of the building or structure, 4) establishment of target levels for contaminant

residuals that will be considered safe for the future intended users of the building or structure, 5) availability of methods for completely removing or sufficiently reducing contamination to target levels, 6) evaluation of secondary/side effects of selected methods on worker health or on materials of construction, 7) worker training and health protection; and, 8) costs. Descriptions of actual building decontamination efforts are included as case studies to provide examples of decontamination strategies that have been used in the past.

This will be the first time this data has been presented.

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# DRAFT

# USER'S GUIDE FOR DECONTAMINATING BUILDINGS, STRUCTURES, AND EQUIPMENT AT SUPERFUND SITES

by

PEDCo Environmental, Inc.
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and

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Contract No. 68-03-3190

Project Officer

Naomi P. Barkley
Solid and Hazardous Waste Research Division
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MUNICIPAL ENVIRONMENTAL RESEARCH LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
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July 1984

DISCLAIMER

This report has been reviewed by the Municipal Environmental Research Laboratory, U.S. Environmental Protection Agency, and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the U.S. Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

ABSTRACT

This handbook describes methods of decontaminating buildings, structures, and equipment at Superfund sites. Types of contaminants most likely to occur in buildings and structures at remedial sites or on removal equipment such as drum grapplers or bulldozers include asbestos, acids, alkalis, dioxins, explosives, heavy metals and cyanides, low-level radiation, organic solvents, pesticides, and polychlorinated biphenyls.

Use of this stepwise guide for developing a decontamination strategy will assist Superfund personnel in determining an efficient, practical, and safe course of action in a given situation. Steps in the process include 1) determining the nature and extent of contamination, 2) developing and implementing a site-specific decontamination plan, and 3) evaluating decontamination effectiveness. Step 2 is further broken down into the following steps: a) identifying the future intended use of buildings, structures, and equipment; b) establishing decontamination target levels for the contaminants present; c) identifying and evaluating potential decontamination methods; d) selecting the most appropriate method(s) for achieving the decontamination target levels; e) determining worker health and safety requirements (training, medical surveillance, personal protective equipment, site safety); f) writing the site decontamination plan; and g) hiring the contractor and initiating cleanup. Descriptions of actual building decontamination efforts at both Superfund and non-Superfund sites are included as case studies.

The manual contains descriptions of 21 decontamination methods for treating or removing contaminants: asbestos abatement; absorption; demolition; dismantling; dusting/vacuuming/wiping; encapsulation; gritblasting; hydroblasting/waterwashing; painting/coating; scarification; RadKleen; solvent washing; steam cleaning; vapor-phase solvent extraction; acid etching; bleaching; flaming; drilling and spalling; K-20; microbial degradation; and photochemical degradation.

This report was submitted in fulfillment of Contract No. 68-03-3190 by PEDCo Environmental, Inc., and Batelle Columbus Laboratories (subcontractor) under the sponsorship of the U.S. Environmental Protection Agency. It covers a period from September 1983 to August 1984, and work was completed as of August 31, 1984.

K-20 (METHOD 19)*

General Description

K-20 is a commercial product sold as a building decontaminant. The manufacturer claims that the product is nontoxic, noncorrosive, nonvolatile, and odorless, and contains at least eight chemicals.

The use of K-20 is primarily a physical decontamination process. It acts as a penetrant and sealer that basically encapsulates and immobilizes toxic contaminants in place. The process is much like permanently enclosing the atoms of toxic residues in minute, impenetrable shells so toxic emissions to the ambient air are eliminated.

Although it acts more like a barrier than a detoxifier, evidence indicates K-20 may facilitate chemical degradation as well as physical separation of some contaminants. Testing performed over a period of approximately 8 months has indicated incomplete recovery of a known amount of applied contaminant, which indicates possible chemical interaction.

As the K-20 mixture bonds with contaminants, it carries the residues at least 1 inch deep into the material. It can penetrate most porous materials up to 1-1/2 inches and has been proven effective against PCB's and chlordane.

K-20 can be applied to large open surfaces by painting and to small irregular areas (inside heating ducts, behind pipes and fixtures) by use of a special gun.

Advantages

Contaminants are stabilized/detoxified in situ. No hazardous wastes are generated.

Disadvantages

This method is in the developmental stages and has not yet gained approval by government agencies for wide-spread use.

State of the Art

K-20 has been used on a PCB-contaminated office building and duct system, an oil spill (liquid PCBs) that occurred on a Navy vessel, and a chlordane-con-

* Source: Reference 19; personal communication from V. Rose, Pacific Gas and Electric Company, San Francisco, California, April 17, 1984, and May 22, 1984; and personal communication from D. R. Lincoln and L. Flax, Lopat Enterprises, Inc., Asbury Park, New Jersey, December 1983 and February 1984.

taminated house. The mixture also has been tested successfully a number of times in private testing laboratories.

Variations of Idea

K-20 may be applied to contaminated surfaces by painting or by spray gun.

Applicability

K-20 has been shown to be effective against PCB's and chlordane. It may possibly be effective against dioxins, and testing of the mixture on dioxin-contaminated soil is expected some time in 1984. K-20 has been used on cinders, concrete, tile, brick, marble, and other porous materials.

Effectiveness

Complete establishment of a permanent barrier is expected.

Engineering Considerations

Process Description--

The application process is very simple. After all loose dirt and debris are wiped off the surface to be treated, K-20 is applied by painting or the use of a special gun. A second coating may follow 24 hours later. When the final coat has been applied, time must be allowed for the mixture to thoroughly dry.

Equipment and Support Facilities Needed--

The following equipment and supplies are needed: brushes, brooms, and other equipment to remove excess surface debris; a container for the K-20 mixture; a paint brush, roller, or special gun, and (possibly) a drop cloth; and safety equipment. Except the special application gun, most equipment needed for K-20 application can be obtained from commercial manufacturers.

Decontamination Time--

The time required for removal of loose surface debris, application of K-20, and drying (longest part of the process) should be moderate.

Safety Requirements--

Safety requirements are the same as those for contaminants such as PCB's. At a minimum, workers should go through a training program and be equipped with eye protection, full-body protective coveralls, and foot cover.

- Waste Disposal

No hazardous wastes are expected to be generated.

Costs

Building Damage and Repair Costs--

Initial uses of K-20 indicate that buildings can be released for unrestricted use, although the Pacific, Gas, and Electric building, in which the duct system was contaminated with PCB's, has yet to be released (Appendix G).

Treatment Costs--

Costs will be moderate to high for equipment and low to moderate for personnel. Most of the cost will be for the K-20 mixture.

Future Work

K-20 is an innovative decontamination technique and therefore needs acceptance from government agencies for widespread use by cleanup contractors. Research is needed for its application to metals and other nonporous surfaces. Also, it must stand the test of time (as of May 1984, the longest period between application and contaminant testing had been 203 days).

LOPAT ENTERPRISES INC.
1750 BLOOMSBURY AVE., BLDG. #1 • WANAMASSA, NEW JERSEY 07712 • (201) 922-6600

August 30, 1984

Ms. Naomi P. Barkley
Solid & Hazardous Waste Research Division
Municipal Environmental Research Laboratory
Cincinnati, Ohio 45268

Dear Ms. Barkley:

At the request of Ms. J. Rams, I am forwarding to you new and additional information concerning K-20 and its application for decontaminating buildings, structures and equipment. They have recently experienced a technical break through with regard to K-20's ability to fully encapsulate asbestos (see attached photomicrographs) and reduce levels of lead in SOIL to an environmentally acceptable concentration level (see attached). In addition, current negotiations with the pesticide industry for termite abatement and chlordane decontamination has generated a substantial increase in our level of activity for that market.

With the assistance of EPA and the State of Missouri, Lopat is currently investigating the application of K-20 for dioxin-contaminated soils. Upon receipt of the samples, we will initiate a battery of tests which we anticipate to show promising results. I will notify you of our findings as soon as conclusive information is available.

I would like to thank you for including K-20 as a developmental technology in your "Users' Guide For Decontaminating Building, Structures, And Equipment At Superfund Sites". As you can see, the applications of K-20 are quickly expanding and its use more widely acceptable, in the commercial sector.

I would greatly appreciate your assistance or comments concerning how Lopat can facilitate gaining EPA's approval as an agency recommended decontamination method. They have yet to receive any written guidance detailing EPA's needs and/or requirements for evaluating K-20 as an accepted technology. As a result, each time we comply with their requests another question and obstacle arises. Can you help us in this process?

Again, thanks for your help. I will be contacting you in the immediate future. However, should any questions/comments arise before that time, feel free to call me at our new offices in Wanamassa, New Jersey at (201)922-6600.

Sincerely,

Louis Flax
Lopat Enterprises, Inc.

Enc.
LF/su

# *Inventors say they can neutralize dioxin*

Related stories page A5

By PATRICIA MC DANIEL
Press Staff Writer

WHERE THERE'S a will, there's a way.

And where there's dioxin, there are people who will try to find a way to control or destroy this most toxic, persistent chemical.

Dioxin isn't just Missouri's problem anymore.

Sites contaminated with the toxic chemical, a byproduct of some pesticides and the chemical found in the defoliant Agent Orange used in Vietnam, are being discovered in New Jersey and other states.

But almost as numerous as these discoveries are discoveries of new ways to counteract it.

"We're being bombarded with ideas," said Conrad O. Kleveno, of the Office of Emergency Response of the federal Environmental Protection Agency in Washington.

One idea the EPA will test as soon as bids are awarded is the brainchild of two Monmouth County men, Louis Flax of Bradley Beach and Lincoln Davis of Middletown Township.

"We don't know yet if the process is effective, but it looks promising based on limited preliminary information," said Dr. Joel Hirschhorn, project director for the Congressional Office of Technology Assessment.

Flax and Davis have developed a chemical they call "K-20." They say it can be painted on a contaminated surface and will bond to dioxin.

As it bonds, it penetrates deep into the center of whatever is contaminated — a brick, for example — and it carries the contamination at least one inch deep into the object.

The formula's inventors have made some preliminary tests at a private laboratory on the effect of K-20 on bonding to polychlorinated biphenyls. They are now planning tests on soil samples from Times Beach, Mo., the site of major dioxin contamination.

Davis said it can also be sprayed on with a special gun he is developing to reach such places as inside heating ducts that often carry contamination released.

Depending on the porosity of the material it is sprayed on, Flax said K-20 can penetrate ¾-to-1½ inches into the material.

They say they are confident the tests the EPA will make will show the material can be used to control dioxin contamination, as well as surface contamination by the pesticide chlordane and PCB's.

"We're not creating a monster," said Flax. "There is nothing in K-20 that can harm anyone."

Davis is even more direct.

"We have one hell of a cure," he said.

Flax and Davis both offer the same description of the formula.

"It's non-toxic, non-corrosive, non-volatile, inorganic and odorless; absolutely harmless," they say.

Flax won't disclose more about the formula except to say it contains "in excess of eight chemicals." They also said it is a fire retardant. He and Davis have a patent pending on K-20.

They say if they provide too much information about it it could be "reverse engineered" by competitors.

"It's such a simple compound I'm amazed someone hasn't tripped over it," Davis said.

The world of chemistry is a new one for both men, who call themselves inventors — not chemists.

Flax is a former typesetter, now president of his own company, Lopal Enterprises, Asbury Park.

Lopal markets small inventions such as a lock for a pushbutton telephone and a foldable picnic table, both of which Davis helped design.

Davis became an inventor after a chronic heart condition he said he now overcome forced him "just to sit and doodle and create."

Davis, who sings and plays the guitar on weekends, was a ship's carpenter and wood worker before joining Lopal.

He said they got into the chemical treatment field unexpectedly.

"It was sort of a team effort," Davis said.

"Lou pushes me into making something and I make it. We started out to make a waterproofer for the picnic table."

The two men came up with a waterproofer that penetrated deep into the surface of concrete.

Then they discussed using that product on a New York State-owned building in Binghamton, N.Y. The building became contaminated with PCB's and dioxin after an electrical fire caused the materials to be emitted inside the building. The building has been closed for two years.

The contractor they spoke to asked them if the waterproofer would have any effect on cleaning up the chemicals.

"I told him I didn't know," Davis said. "At first it didn't work, but I played around with the chemicals, and then had it tested.

"It worked the first time — that usually never happens," said Davis, who developed the formula in his basement.

The dioxin treatment inventions — Davis calls himself a "Rube Goldberg" type who likes to play with all types of materials and designs — are to be tested by the EPA.

There are four tests planned, including one of the Times Beach soil, as well as tests of how the chemical penetrates and how completely it removes surface contamination. The tests in total may cost up to $45,000.

But Flax said the support of the government is the only way these expensive tests can be carried out.

The research and private testing he did stretched the finances of his small company to the limit.

But he said New York State is considering a test of K-20 for use on the contaminated building, and, if it tests out, may buy 45,000 gallons of the formula, providing a financial boost to the company.

Meanwhile, he said he has been grateful for the support on the federal and state levels in New York and New Jersey.

Kleveno, who is a member of EPA's hazardous waste support division that specializes in cleanup technology, said the agency tries to test projects coming in unsolicited. "If they're feasible and they look good."

An average of two to three proposals come into his office alone each week, he said.

"The technical person who looked at Mr. Flax's material was very much interested in it," Kleveno said.

In New Jersey, Dr. Robert Fischer, a research scientist with the state Office of Science and Research, said, "I would like to see the project get a fair trial by state and federal agencies. I think we should see if it can do the job."

Fischer said he would like to see the results of the test on the Times Beach soil to see if K-20 can be used to treat the dioxin-contaminated soil in Newark and other sites in New Jersey.

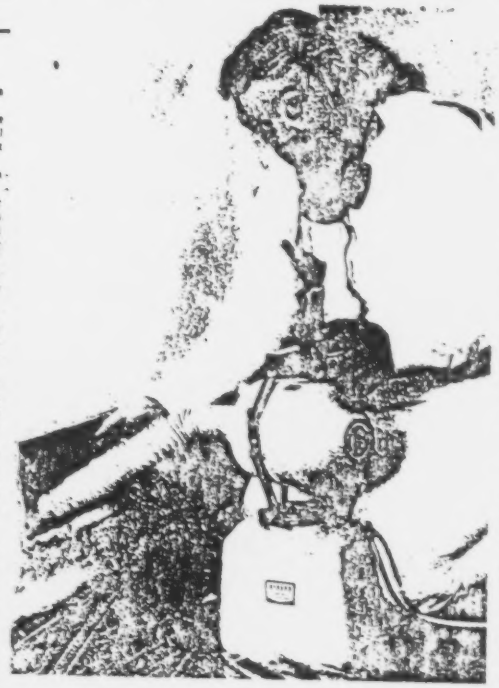
Flax said the K-20 can be sprayed on the soil as it raked up by a large machine.

The effectiveness of K-20 in soil as opposed to building material is an area that still needs complete testing, Flax said.

But Hirschhorn said the Lopal project, and the others that are coming in to the federal government, indicate "this is just the beginning. We're seeing a lot more activity.

"The dimensions of the problem are so huge, but I'm optimistic we'll see development of a permanent solution, rather than trying to contain or isolate waste.

"People like Flax are faced with all kinds of difficulties, but we will try to help them out," he said.



Asbury Park Press

Lincoln Davis with gun that sprays K-20 chemical to clean up dioxin.

Asbury Park Press

Louis Flax explains his and Lincoln Davis' process to counteract dioxin.

ASBURY PARK PRESS

*Inventor still seeks EPA test*

The Daily Register

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Sunday Star-Ledger

Say new formula cleans up PCBs

The Trenton Times

Waste Producers, Disposers Delay Move to Better Treatment Methods

"There's a lot of risk involved in designing and siting" a waste treatment plant, says an EPA official. "Why should a company take a technological risk along with other risks?"

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*Inventors say they can neutralize dioxin*

Red tape slows ...

The Daily I

EPA delays use of I

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NEW YORK'S PICTURE NEWSPAPER

DAILY NEWS
NEW YORK'S PICTURE NEWSPAPER®
Wednesday, April 13, 1983

# Say new formula cleans up PCBs

By FRANK McKEOWN

A small group of inventors, operating out of Bradley Beach, believe they may have come up with a method of neutralizing cancer-causing PCBs (polychlorinated biphenyls) and are pressing federal and state authorities for the opportunity to determine if they are correct.

The group, incorporated under the names of Failsafe and Lopat Enterprises, expects to be allowed this week to try their formula on a house in either West Islip or Old Westbury on Long Island to determine its effectiveness on Chlordane or Aldrin.

The carcinogenic nature of these chemicals gave rise to a spate of news stories recently when it was found that termite exterminators had used the dangerous chemicals inside Long Island homes.

Louis Flax, president of both corporations, said the formula had been tested by the U.S. Testing Co. in Hoboken and been found effective in neutralizing toxic PCB.

Flax said the chemical breakthrough was made by Lincoln Davis, a research and development man for the corporations who makes his home in Lincroft.

**FLAX SAID THE** formula, known as "K26," was applied to tile, cement and cinderblock which had been contaminated by the PCB, Aroclor 1242.

The formula compound, which he said is nontoxic, nonflammable and noncarcinogenic, "simply absorbs the PCBs and renders it completely neutral," Davis said.

Flax said they were trying to have the formula tested on a state office building in Binghamton which was impregnated with PCBs after an explosion and fire.

The firm official said the building has been closed for more than 18 months and millions of dollars have been spent unsuccessfully to rid it of contamination.

Flax said the contamination at the building was 350 parts per million while the test made with their formula was on the basis of 2,700 parts per million, or almost eight times as great.

**THE FIRST TEST** done by the New Jersey testing firm detected none of the PCBs after the new formula was painted on it, Flax said.

But to prove it further, he added, the testing firm held the test materials for another 36 days to make sure it would not reappear on the surface.

Flax said they had also contacted the federal government to obtain soil samples from Times Beach, Mo., where PCB contamination has forced evacuation of residents.

The president of the New Jersey firm insisted: "The product is not just a surface covering, but a solution that penetrates concrete, marble and other porous type products, enabling it to seek out and eliminate PCB contaminates."

**LAX, WHO HOLDS** two patents on locks for push-button telephones, said a patent was being sought for the new formula.

Flax said the firm was seeking a government grant with which to conduct the very expensive tests that might prove the effectiveness of its product in cleaning up the environment.

# Technology

ity. "A couple of bites a year could cost a million dollars or more," says Dr. Samuel Gruber of the University of Miami, who heads one of three teams working on the problem.

Why the taste for hardware? It's not a question of nutrition, clearly. Sharks don't often swallow the sonar buoys and such that they attack. Nor is their petulance caused by teething pain, though sharks continually produce new teeth and shed old ones. Rather, according to Dr. Gruber, sharks bite equipment because of their unique ability to sense electrical impulses. After all, he notes, sharks can detect even the faint electrical emanations from a flounder buried in the sand. "They must think the instruments are prey," says Gruber.

Until recently, given their evolutionary success, sharks seem to have had most things their own way. Unlike other fish, sharks assumed their basic form 350 million years ago. Their teeth are one of the hardest biological materials known. But scientists think they can discourage sharks' taste for electronic delicacies. Gruber and his staff are studying a Red Sea flatfish called Moses sole, which secretes a toxin that seems to repel sharks naturally. To their surprise, they have found the fish's secret weapon is a surfactant, or detergent, similar to ones used in ordinary shampoo. If all goes well, tests will produce a compound usable on both people and equipment that will discourage sharks from taking that first bite.

That would be a relief not only to the U.S. Navy, which is providing some of the funding, but also to millions of beachgoers still wondering whether it is now safe to go back in the water.—Laura Saunders

## Waste un-management

For all the talk about cleaning up toxic waste, something like 98% of it is still being dumped or buried. It should be simple enough to find a better solution and cash in on what ought to be a huge business opportunity. But in waste management, the solutions are as complex as the chemicals meant to be cleaned up.

The biggest impediment to a technological solution, many companies feel, is the U.S. Environmental Protection Agency. Its bureaucracy is so labyrinthine and the rules to administer the agency's Superfund—a $770 million kitty designated specifically for toxic waste cleanups—are so entangled, that money for testing promising new technologies is rarely made available to outsiders, or even to those inside the agency.

That has hurt companies like Lopat Enterprises, Inc. This tiny Asbury Park, N.J. firm last year developed a product called K-20, which costs, and thereby renders harmless, polychlorinated biphenyls (PCBs), the deadly substance once used in all electrical transformers. Unlike incineration, which treats PCBs collected for disposal, K-20 can treat them *in situ*, so that buildings whose walls and ceilings were contaminated by PCBs during transformer fires no longer have to be closed down. Used commercially for the first time in October, K-20 reduced PCB contamination at a Pacific Gas & Electric site in California from 60 parts per million to 0.1 part per million in five days, according to Lopat President Louis Flax.

Sounds great. The problem is, many companies that might be inclined to try a new technique first want the EPA's blessing before they get involved. In the case of K-20, the EPA has given no indication that it will get involved. The EPA says it has a solution for bulk PCBs: incineration. But the agency adds that it's not in the business of approving, much less favoring, products that might clean contaminated buildings.

Does this mean that K-20 is a product with no market? Maybe yes, maybe no. No one inside or outside the EPA seems to know. "The whole thing is a bureaucratic merry-go-round," says Flax. "My brain is scrambled at this point."

K-20 isn't the only promising process languishing at the EPA's door, says Joel Hirschhorn of the Congressional Office of Technology Assessment. "The EPA doesn't have a formal program, if any, to deal with situations where innovative technology comes along," he says. "It is holding back their commercialization."

If industry refuses to act without approval, should the EPA get into the testing business? The Reagan Administration thinks not, preferring to let the market work out its own problems. But where legal liability rears its ugly head, the market is often constrained. Nobody exposes himself to the risk of expensive litigation when there are cheaper solutions available. That is one reason most waste is still treated in the time-honored method: landfill.

Government has been around this block before. At the turn of the century, similar concerns led to the establishment of the Food & Drug Administration. While it performs almost no tests of new products and technologies on its own, the FDA reviews the experimental data that support those claims. The process has proved remarkably effective in delivering consistently high-quality medicines and pure food to the American public.

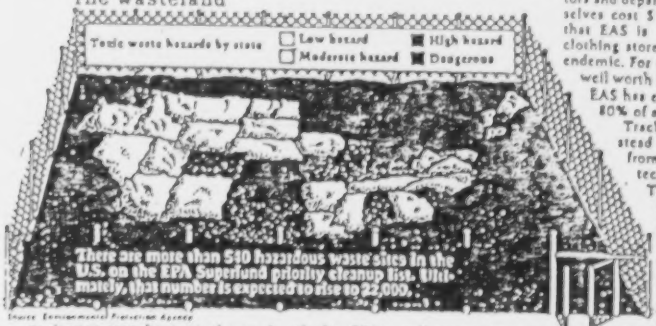
Then there is the National Bureau of Standards model. Their own labora-

# Technology

tories test products and processes for other federal agencies, and set standards for performance in such areas as fire safety and use of hazardous materials in the work place. Either model should allow the EPA to perform an effective role in ensuring that the best technologies are made available.

Although the EPA has continued to duck any role in promoting technology, it may soon have no choice. A revised version of the Resource Conservation & Recovery Act of 1976 (RCRA) has passed in the House, Senate action will have to wait until next year. If it passes—the betting now is that it will—a twist of logic embedded in the legislation should force a greater use of technology: The bill pending gives companies that claim no alternative up to 54 months to come up with nondumping solutions for their most toxic wastes. If they don't, the EPA must mandate a high-technology solution, irrespective of cost. Given EPA and industry laxity to date, it is almost certain that industry's hand will be forced sometime in the late 1980s. Congress, apparently skeptical of the EPA's willingness to get tough, chose to substitute time for action. A provision that would have forced the EPA to make companies use, within two years, the best available technology for their cleanups was written out of the bill. "After all," says Christopher Harris, counsel to the House commerce, transportation and tourism subcommittee, which helped shape the RCRA rewrite, "the last time the EPA tried to make rules in this area, it took them five years, and look where they got."—Alyssa A. Lappen

The wasteland


Toxic waste hazards by state
Low hazard
Moderate hazard
High hazard
Dangerous
There are more than 540 hazardous waste sites in the U.S. on the EPA Superfund priority cleanup list. Unfortunately, that number is expected to rise to 22,000.

Source: Environmental Protection Agency

## Tattletale tags

Santa Claus is not the only one coming to town. So are the shoplifters. The weeks between Thanksgiving and Dec. 24 account for not only 27% of the year's retail sales but also 15% to 20% of all shoplifting. Shoplifting (euphemistically accounted for as part of "inventory shrinkage") add up to an estimated $7 billion to $9 billion a year in losses nationwide. That means thieves probably get away with $1.5 billion worth of merchandise during the Christmas shopping season alone.

Technology's answer to the problem is "electronic article surveillance," or EAS. Instead of spying on the customers, retailers now increasingly spy on their merchandise with price tags sensitive to electromagnetic, radio or microwave frequencies. The tag is removed from merchandise at the cash register, and receivers are installed at exits to set off a piercing alarm if one passes through.

Sensitized tags have been on the market since Arthur Minasy, chairman of Knogo Corp., sold the first radio-frequency tag, developed in his garage, in 1966. Minasy's garage is now used to house his Rolls-Royce, but control of the EAS market has passed from Knogo to Sensormatic Electronics Corp., the clear leader of the three major antitheft device companies. Sensormatic has about 70% of the world market, compared with about 20% for Knogo and 10% for Checkpoint Systems, Inc.

The potential market for these tags is huge—probably 35% of the U.S. retail industry could employ EAS, according to industry experts. But, so far, less than 5% of the stores that could use them, do. The reason: EAS is expensive—from $2,000 to $7,500 per system, and a large store may have hundreds of systems for exits, escalators and departments. The tags themselves cost $1 apiece. The result is that EAS is mainly used by larger clothing stores, where shoplifting is endemic. For those stores it might be well worth it: Experts estimate that EAS has eliminated from 50% to 80% of all shoplifting.

Tracking merchandise instead of people makes sense from a legal as well as a technological standpoint. The objective is deterrence. "Catching a shoplifter is just about the worst thing you can do," says C.M. Harbin, executive vice president of Sensormatic. "You incur litigation costs, loss of security personnel work time, loss of merchandise while it's held in evidence and the possibility of a countersuit if you don't get a conviction."

So widespread is shoplifting that Peter Berlin, who publishes a monthly newsletter for Price Waterhouse on inventory shrinkage, says that the average shoplifter is also the average customer. Only 10% of all shoplifters are professionals. Others steal infrequently, on the basis of what Berlin and other industry experts call a "mental triangle"—opportunity, motivation and a presumed low risk of getting caught. If retailers can knock out one of those three sides, they can reduce shoplifting without the attendant headaches of arrests and prosecutions.

Do EAS systems replace security guards? No, says Harbin: "Machines should watch people. People should watch machines." Any retailer will tell you, Berlin adds, that he fears the dishonest employee as much as the dishonest customer. By installing EAS, security personnel can be freed to deal with employee theft, which accounts for anywhere from 30% to 60% of all inventory shrinkage.

Most sensitized price tags are called "hard tags" because they have to be made out of plastic. Now a soft tag has been developed for items that can't be penetrated by the pin necessary to attach a hard tag, like records

ASBURY PARK PRESS
Sunday, November 6, 1983



# *Inventor still seeks EPA test*

By PATRICIA MC DANIEL
Press Staff Writer

BRADLEY BEACH — It seems finding a way to neutralize hazardous waste has been easier for Louis Flax than finding a way to interest the federal bureaucracy in supporting tests of his work.

Flax is a Bradley Beach inventor, who with his associate, Lincoln Davis, invented the material they call "K-20."

K-20 is a formula of harmless materials that can bond to contaminants such as polychlorinated biphenyls or the pesticide chlordane, Flax said.

As it bonds, it penetrates deep into the surface of whatever material is contaminated, encapsulating the material deep inside a contaminated cinder block, for example.

Flax, whose business, Lopat Enterprises, operates from Asbury Park, has wanted the chance to test K-20 on dioxin-contaminated soil for several months now.

He has already gone through numerous private tests of its effectiveness on PCBs and chlordane.

The areas K-20 could be applied to dioxin are all too numerous — from contamination problems in Times Beach, Mo., to Newark's Ironbound section.

THE CONGRESSIONAL Office of Technology Assessment and several congressmen are interested in helping Flax.

But why aren't the people in the Environmental Protection Agency — which can pay for expanded testing of the product — just as excited?

"It's really the bureaucracy. It's very, very complex," said Joel Hirschhorn, of the congressional technical assessment office.

"There is no established procedure for people like him (Flax) to get through the EPA into the hazardous waste management field. It's a very regulated area," he added.

Flax is a former typesetter and inventor of such diverse items as a push-button telephone lock and a collapsible picnic table.

Davis, of Middletown Township, is a sometime singer and woodworker. He originally came up with the formula after trying to devise a sealant to protect against water damage.

Despite the lack of EPA funding, Lopat Enterprises is experiencing more success in recent months.

Flax has reopened an office in Asbury Park, and has sparked the interest of several firms with hazardous waste contamination problems.

For example, he was recently in San Francisco where the IT Co. bought and applied large quantities of K-20 in a Pacific General Electric building which was contaminated when transformers, containing PCBs, exploded.

Asbury Park Press

**Louis Flax explains his and Lincoln Davis' invention of K-20, a material to neutralize hazardous waste. He wants chance to test it on dioxin.**

The PCB count went from 60 parts per million to 1 parts per million, Flax said.

Flax has had other inquiries, including the possible use of K-20 as an "enhancer" for the stones of the Egyptian Pyramids.

HE SPENDS much of his time traveling to Washington where he recently testified before a House of Representatives committee on his product and on the needs of inventors such as himself to have more support from the federal government.

Flax would like to have the EPA test his product on dioxin. Tests by EPA on that and on K-20's work on other materials would "sanction" the product, Hirschhorn said.

But Hirschhorn said he so far has not been able to get the material tested by the EPA on contaminated soil samples.

"He hasn't even been able to get contaminated samples from the EPA so he can have the material tested himself," Hirschhorn said.

Hirschhorn added that there is a need for a cheaper alternative to removal of contaminated soil or burning of it.

Hirschhorn said test results on other applications of K-20, including on PCBs and chlordane have been good. The results make Hirschhorn "optimistic" about K-20's effectiveness on dioxin.

384
HERALD NEWS
PASSAIC, N.J.
D. 75,286

OCT 31 1983

# Inventor: Red tape stalls PCB sealant

BRADLEY BEACH (AP) — A self-made inventor says that after "impressive" private test results bureaucratic red tape is stalling the sanctioning of a substance which supposedly seals off PCBs in contaminated buildings.

Louis Flax said a member of his firm, Lopat Enterprises, originally developed the substance, called K-20, to seal off a friend's basement from water seepage.

Tests conducted by the United States Testing Co. showed that K-20 dissolved polychlorinated biphenyls in cinder, concrete and tile blocks, Flax, 58, said Sunday in a telephone interview from his home in this Monmouth County community.

THE INVENTOR said that a the owners of PCB-contaminated office building in San Francisco applied K-20 about a month after an expensive scrubbing procedure failed to lower the concentration of the hazardous chemical. He added that after a "rub" with K-20, the concentration fell by half.

Flax said after spending about $75,000 on testing the substance, he has run out of funds.

"These tests are extremely expensive and we just don't have that kind of money," he said.

The inventor claimed the material is what industry is looking for. But, he added, even if he could afford additional testing on his own, most industries would wait for a seal of approval from the Environmental Protection Agency before using the product.

After a meeting between Flax and EPA officials, an EPA research and development senior staff engineer said K-20 has the potential for "the stabilization, encapsulation and fixation" of the PCB in soil and is worth spending federal funds to test it.

EPA ENGINEER Paul Des Rosiers said he was frustrated that federal Superfund money had not been appropriated to carry out the necessary tests, which would cost about $60,000.

Another senior official, Joel Hirschhorn, of the Congressional Office of Technology Assessment, said the private laboratory's test results on K-20 are impressive.

Hirschhorn said that if test results indicating K-20 works on PCBs are accurate, it is likely the substance would work on dioxin as well.

"There are a lot of similarities between PCBs and dioxin," he said.

Hirschhorn said that of all the new technologies to combat PCBs "this is the most interesting one."

336
DOVER, N.J.
ADVANCE
D. 17,162

OCT 31 1983

# Fed red tape ties up inventor's discovery

BRADLEY BEACH (AP) — A self-made inventor says that after "impressive" private test results bureaucratic red tape is stalling the sanctioning of a substance which supposedly seals off PCBs in contaminated buildings.

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269
WOODBRIDGE, N.J.
NEWS TRIBUNE
O. & S. 52,520

OCT 31 1983

## 'CBs sealant stalled by EPA

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OCT 31 1983

State

337
DAILY RECORD
MORRISTOWN, N.J.
O. & S. 57,050

# Inventor's PCB sealer in limbo

BRADLEY BEACH (AP) — A self-made inventor says that after "impressive" private test results, bureaucratic red tape is stalling the sanctioning of a substance that supposedly seals off PCBs in contaminated buildings.

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Pest Control Technology
FOR INDUSTRY PROFESSIONALS

## News

### New product could deactivate chlordane

A new product from Lopat Enterprises, Inc., called K-20 has been used successfully to reduce chlordane levels in homes contaminated by the termiticide, according to company President Louis Flax.

In one test, chlordane levels were reduced from 23.8/ug/m$^3$ to 3.1/ug/m$^3$ in the basement of a home in Locust Valley, N.Y. The test was conducted by an independent testing lab located in Westbury, N.Y.

"The chemical (K-20) was originally devised for water intrusion systems," Flax says, "and then we formulated it for (cleaning up) PCBs and dioxins." Flax says K-20 works by "encapsulating" the target chemical. "But what it does inside the chemical, we don't know yet."

PCOs interested in learning more about K-20 can contact Flax at Lopat Enterprises, Inc., Suite 200, 640 Mattison Ave., Asbury Park, NJ 07712, 201/776-6710.

Pest Control Technology
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